

**A
GENERAL
PLAN**

THE MUNICIPAL DISTRICT OF
STONY PLAIN

EDMONTON DISTRICT PLANNING COMMISSION



A General Plan For **THE MUNICIPAL DISTRICT OF STONY PLAIN** **C O N T E N T S**

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INTRODUCTION

Rural land-use planning in the Municipal District of Stony Plain commenced ten years ago, with establishment of the Municipality's Agricultural Service Board. Since that date the Board has rendered a great variety of services in fulfillment of its statutory obligations to control weeds and livestock diseases, to conserve soil and to promote agricultural policies that will further the welfare of the farmer and the Municipality. The vaccination of calves against Bangs Disease, the inspection and eradication of weeds, the distribution of 2, 4-D chemical weed killer at cost and of gopher and warble fly poison free, the analysis of soils on individual farms, the promotion of proper crop rotation programs—these and numerous other activities provide a continuous service to the individual farmer.

Underlying this work, and indeed making it possible, have been a number of basic studies of the land resource and farm economy by specialized agricultural agencies notably—**Soil Survey of St. Ann Sheet**—April, 1930, by F. A. Wyatt, J. D. Newton and T. H. Mather; **Pioneer Farming and Municipal Finance in the Sangudo-Winfield Area of Alberta**, 1941, July, 1947 by B. K. Acton and C. C. Spence; **Wooded Soils and Their Management**, by J. D. Newton, A. S. Ward, and C. F. Bentley, University of Alberta, 1948; **Cropping for Profit and Permanency** by W. E. Bowser and A. G. McCalla, August, 1950, the **Alberta Soils Survey**, and the **Mixed Farm Study**, Dairy Branch, Department of Agriculture, Alberta. This body of information forms a solid theoretical foundation for the District Agriculturist and Field Supervisor in dealing with such questions as: Shall I follow a 5 or 10 year rotation? What crop is best for my soil? Do you think I could raise a decent crop of flax? What kind of legume should I grow? Shall I use ammonium phosphate fertilizer, or ammonium sulphate?

Running parallel with these two types of rural planning, and identical with them in aim, but broader in method and scope, is the land-use planning of the Municipality's Interim Development Board, which is responsible for preparing, with technical assistance of the District Planning Commission, a general plan for the Municipal District. To date this planning board has been mainly concerned with controlling the urban invasion of its territory in an orderly manner, that

is, with the location and control of commercial development along highways, and of smallholding and summer cottage settlements. Planning for agricultural land has been negative and protective. A fence has been put up, but we have not yet stepped over the fence to plan for the orderly and economic development of the land within it. Thus there still remains the task of creating a land-use plan for the major part of the Municipality's eight hundred and twenty square miles.

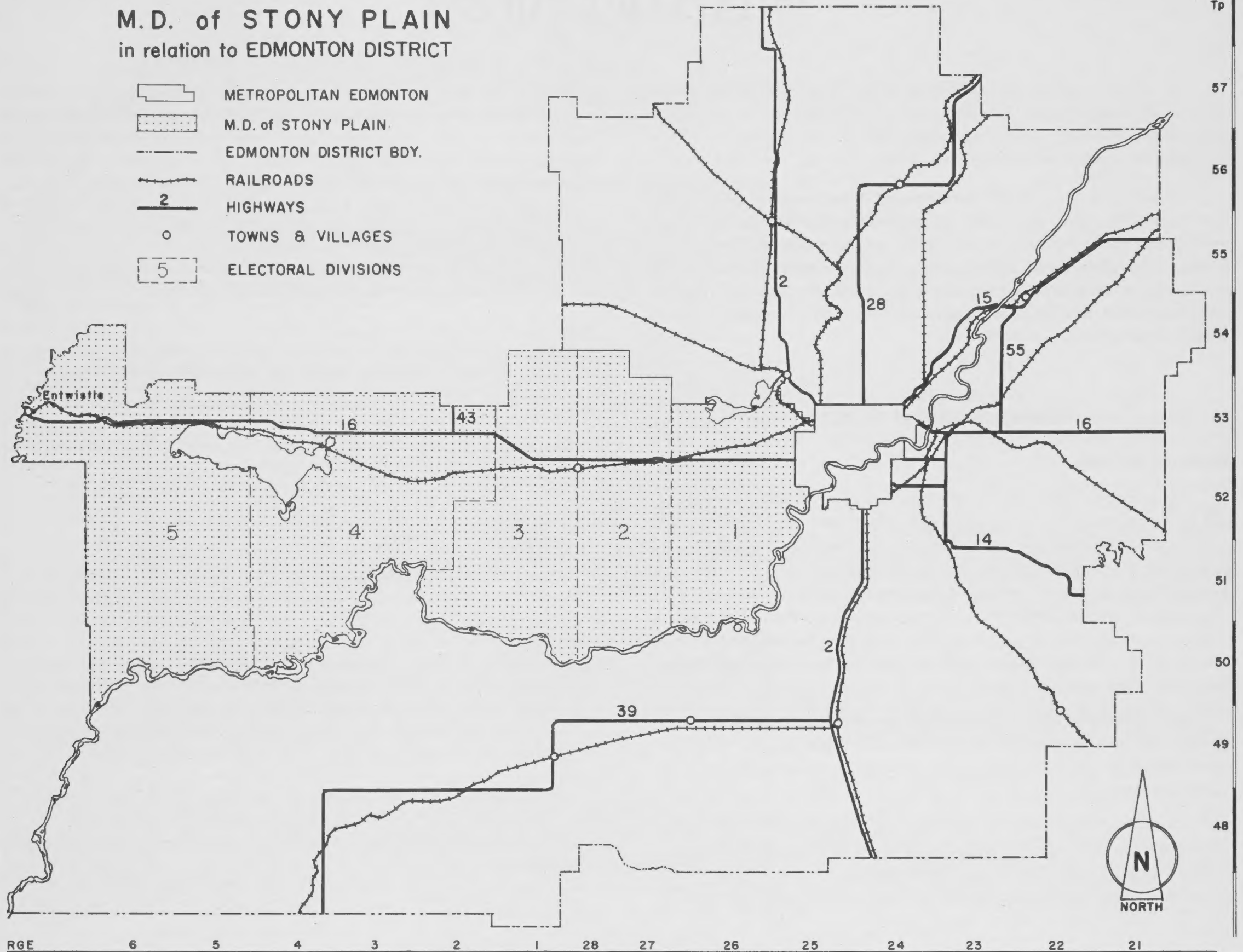
It is the purpose of a general plan, as defined in Alberta, to provide for the orderly and economic development of the land within the Municipality. "Economic" is used here, not in the short-term sense of immediate profit, which may be consistent with the exhaustion of the soil, but in the long-term sense of productivity, of the maintenance of soil fertility and, along with it, of municipal and individual solvency. Community planning is inherently concerned with long-term values because the Community itself is long-lived, if not eternal. Thus in the field of rural land-use, its aims dovetail with the conservation aims of the agricultural agencies—provincial, local and university. But its method and scope are different, and therein lies the opportunity for a unique contribution.

Planning, in its study phase, is comprehensive. This report will attempt to weigh all the factors which determine the economically optimum use of land. Existing land use, soil, topography, existing agricultural activities, the economics of marginal areas, and the present relationship of human settlement to public improvements—analysis of all these factors will form the foundation of the rural land-use plan. In addition to these local conditions, the Stony Plain plan will embody the special land-use needs of the large metropolitan population for whom the municipal area forms a rural doorstep.

Having determined optimum land-uses, it will be possible to determine, on the basis of the varying amount of labour required for different types of farm, the total rural population when land uses are optimum. And the report will then proceed to examine the physical and social facilities—the network of roads, schools, libraries, etc.—that will be required when both land uses and population are optimum.

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 METROPOLITAN EDMONTON
 M.D. of STONY PLAIN
 EDMONTON DISTRICT BDY.
 RAILROADS
 HIGHWAYS
 TOWNS & VILLAGES
 ELECTORAL DIVISIONS



SOILS AND LAND USE

The Municipal District of Stony Plain is in west central Alberta. This area is characterized by long, bright moderately warm summer days, and bright cold dry winter weather. Generally, winter temperature variations are much less than those experienced in Southern Alberta which has recurring "Chinook" or warm dry winds.

Precipitation is relatively light, averaging from 15 to 20 inches per year. Happily, approximately 80% of this precipitation falls as effective rainfall from April to October with the major portion coming during the growing months of June and July. The frost free period is usually about 95 to 100 days long. The growing season is longer as killing frosts do not occur unless the temperature dips below 29°F. Early killing frosts do occur occasionally. However, in most years frost has not been considered a serious handicap to cereal production in this area.

PRESENT LAND USE PATTERN

The Major Soil Zones

Three major soil zones, appear in the Stony Plain area, the black, the grey-black, and the grey-wooded. The accompanying **Soils** map indicates the location of these particular zones. Generally the change from one soil zone to another is progressive from east to west—although there are some exceptions. Both the grey-black and grey-wooded soils are in evidence near the east boundary of the Municipality and at the western end there are similar large areas of grey-black soil which interrupt the pattern of the grey-wooded soils. It should be noted that the black soils make up a relatively small proportion of the total acreage of the Municipality. The grey-wooded and grey-black areas are about equal in size.

The characteristic prairie soil zones have developed by the action of climate, vegetation and time upon the original parent material which in most cases was glacially deposited. The glacial material varied drastically in respect to mineral content, texture and topography.

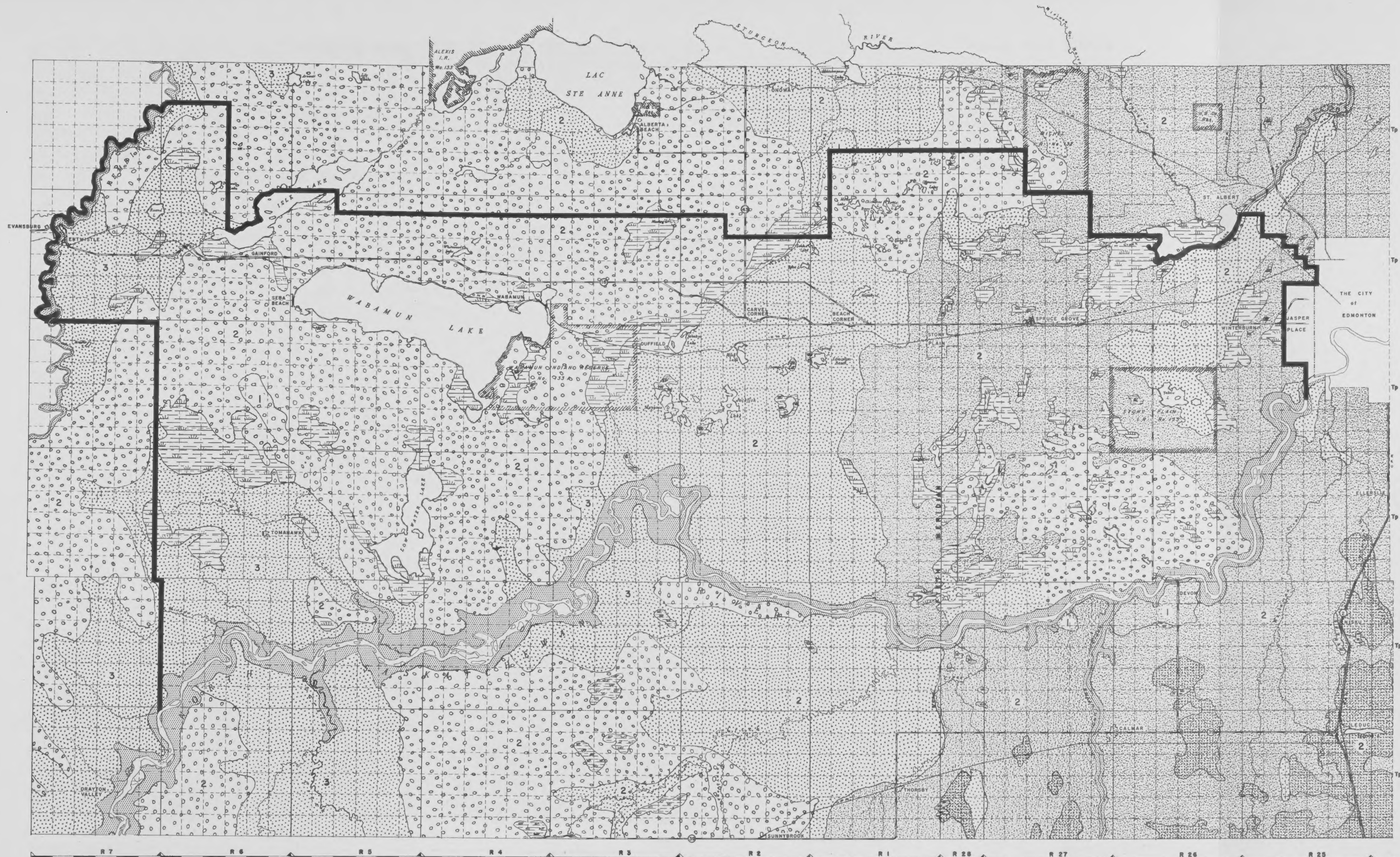
Climate has been continuously converting this parent material into soil. The soils in areas of similar climate have developed many similar characteristics. The variations in wind velocity, dryness of air, average temperature between each of these climatic zones has influenced the vegetation and this in turn has affected the soil formation. The

brown soil of southern Alberta has developed under conditions of high wind velocity, dry air, and higher average temperatures. This is the short grass prairie. The black soil zone has a much lower wind velocity, and a lower average temperature. There is a greater moisture efficiency permitting a more luxuriant growth. This is the parkland area of Alberta. The grey-wooded soil zone is the forested area of Alberta developed under cool sub humid conditions. The evolution of soil under this forest vegetation is quite different from that of the grass-land.

In Table 1 factors affecting productivity in the three zones are summarized. And in Table 2 the composition of occupied farm acreage is compared.

TABLE 1—Productivity Factors, Soil Zones, M.D. of Stony Plain

	Black	Grey-Black	Grey-Wooded
Surface Soil	8"-10" black 40" plant feeding range	2-5" dark brown to black 2-5" brown to light brown	Thin dark surface greyish brown sub- surface - heavy textured sub-soil
Nitrogen Content surface foot	.4 to .5%	.3%	.1%
Organic Matter and mineral plant food content	high	fairly high	low
Drainage	well drained	fairly well drained	variable
Texture	loam	loam	loam
Topography	level to gently rolling	gently rolling to rolling	gently rolling to hilly
Productivity of Soil	good to very good	fairly good to good	poor to fairly good



SOILS M.D. of STONY PLAIN (& ENVIRONS)

KEY

- SAND
- BOG
- GREY WOODED
- GREY BLACK
- BLACK KAVANAGH
- ALLUVIUM

- ① SANDY SAND LOAMY SAND SANDY LOAM
- ② LOAMY FINE SANDY LOAM VERY FINE SANDY LOAM LOAM, SILT LOAM, SILT
- ③ CLAYEY SANDY CLAY SANDY CLAY LOAM SILTY CLAY, CLAY

M.D. BOUNDARY

NOTE: South boundary follows the
NORTH bank of the NORTH
SASKATCHEWAN RIVER



scale: 1" = 4 mi.

data: ALBERTA SOILS SURVEYS

date: January 1955

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BLACK SOIL AREA

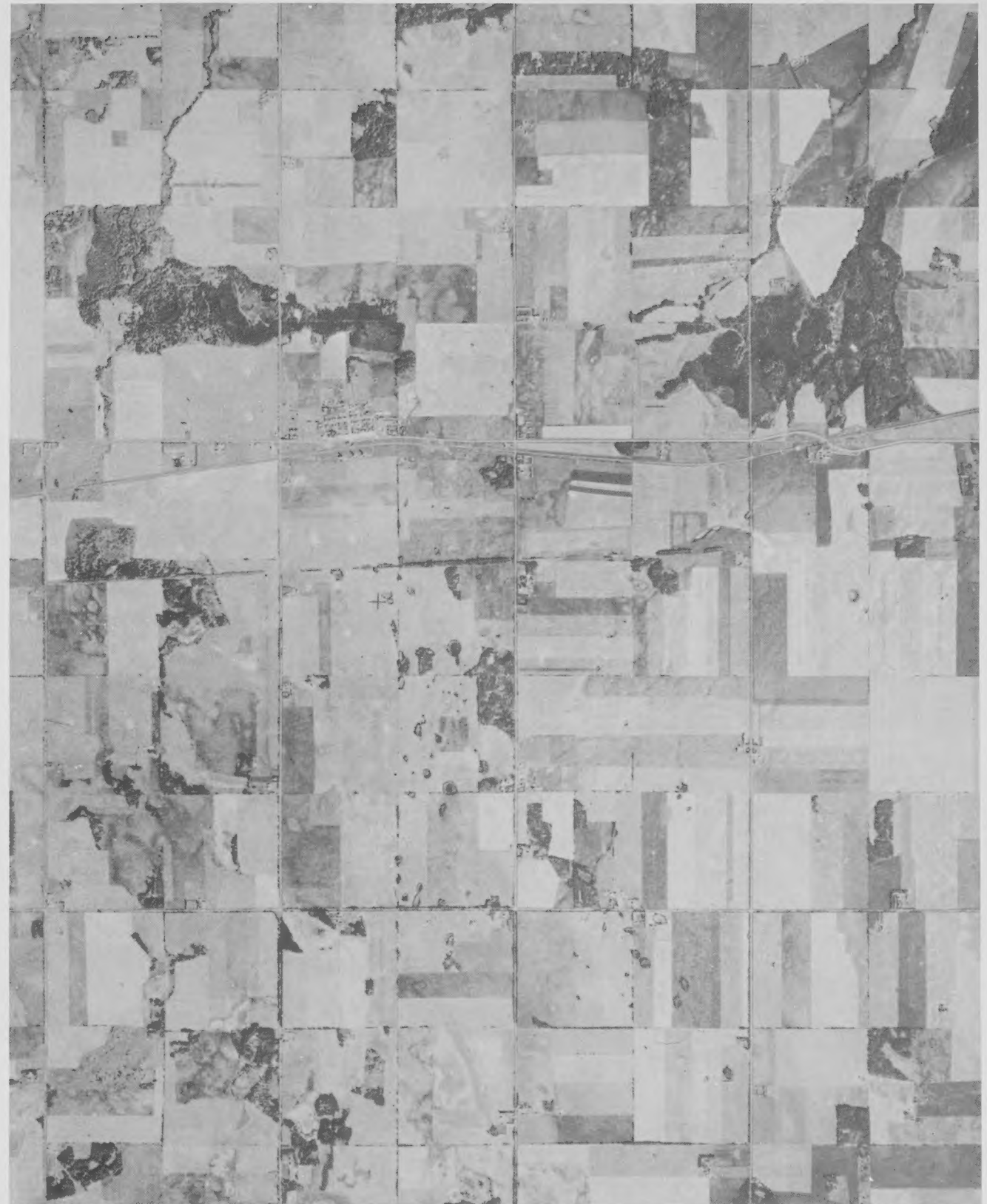
The parkland soils in this area have developed under conditions of cooler temperatures and a lesser rate of evaporation than the brown soils. The vegetation is majorly grass-land with numerous bluffs of shrubby trees.

These conditions have developed a soil which is deep and black and rich in organic matter and mineral plant foods. Most of the soils are of a medium or loam texture and are well drained. The topography varies from level to gently rolling. The proportion of waste land in the black soil zone is very small.

Mixed farming is the farm enterprise which is most prevalent, with livestock playing a very important part in the farm economy. Coarse grains are taking an increasingly important place in the acreage sown to cereals. The barley grown here can usually claim a premium for malting purposes. At the present time there is a fairly large acreage which is left in summer-fallow each year.

Land Use Pattern

1. Straight roads and patchwork quilt pattern, indicate fairly level land.
2. Lightly-wooded dark areas along drainage ways, indicate evergreen vegetation.
3. High percentage of the land is occupied and cultivated.
4. Farmsteads along roads occur at the rate of about two per each mile, and are well-defined by buildings, hedges, and shelter-belt planting.
5. Clear definition of standard fields of varying tones from dark grey to white would seem to indicate widespread use of rotation plans.
6. Predominance of plowed fields indicates considerable amount of summer-fallowing.
7. Drainage pattern is well-defined, consisting of shallow meandering creeks, and occasional small pot-hole sloughs.
8. Land is well drained, as shown by solid appearance of the fields.



Land Use Pattern Spruce Grove Area

GREY-BLACK SOIL AREA

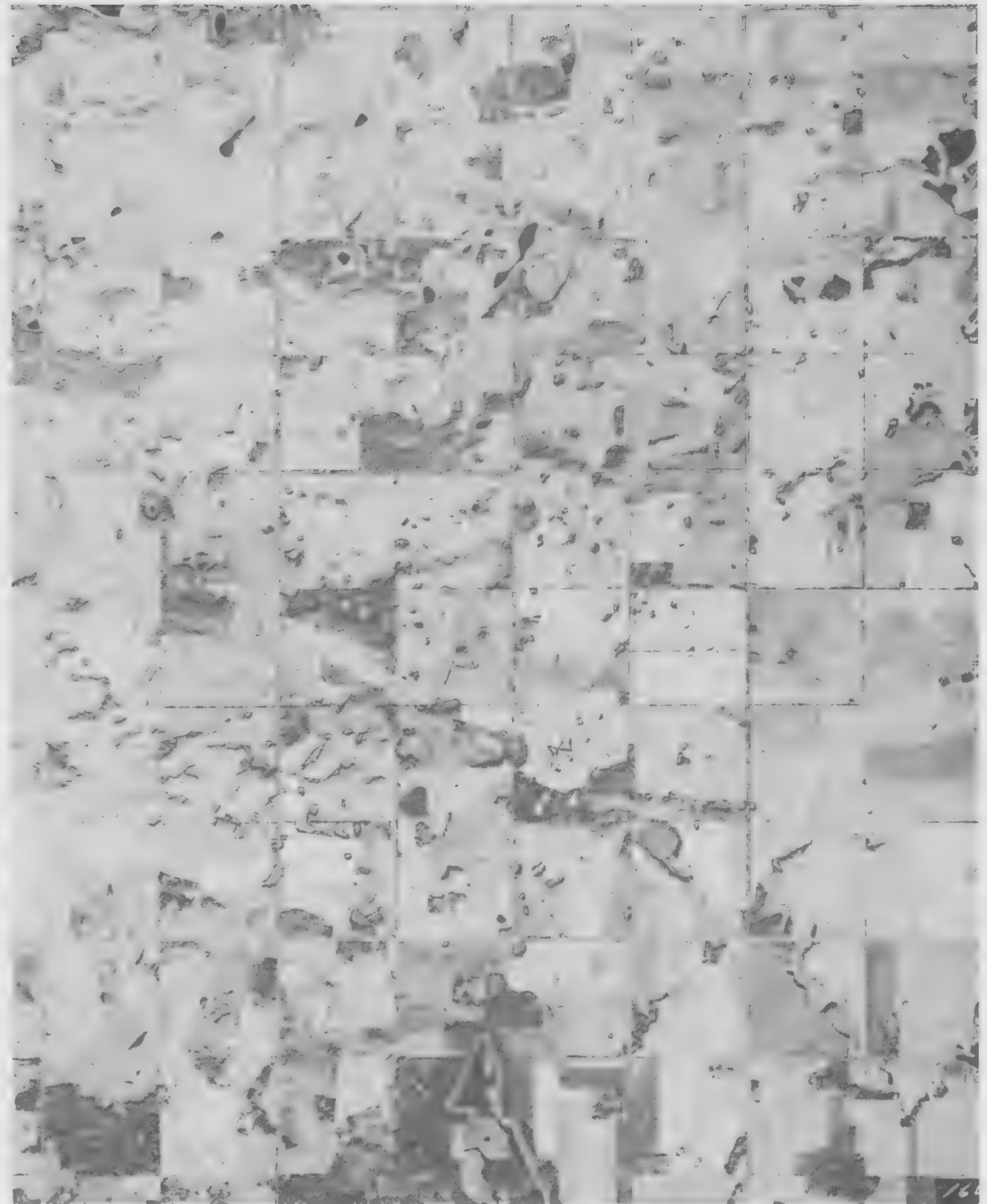
Grey-black soils have characteristics intermediate between the black and the grey wooded. There is some evidence of the leaching of the surface soil, such as occurs under the cool humid conditions prevalent under forest cover, but generally these soils are much richer in plant food than those of the grey-wooded area. In reality all the gradations between a black and a grey-wooded soil appear.

The topography is quite variable, going from undulating to rolling. There is more uncultivated land than in the black, indicating the presence of more natural pasture and waste land. The texture of the soils is for the most part medium, however, there are some lighter textured sandy loams in the hilly area near Carvel Corner. There are some soils of heavier clay loam texture near Tomahawk and similarly in the Entwistle area at the western side of the Municipality.

The general farm practise is again mixed farming, very similar to that in the black soils. However, the emphasis is more and more centred upon livestock because of the necessity of using the increasing proportion of marginal land as pasture and hay land.

Land Use Pattern

1. Roads no longer straight, patchwork pattern, interrupted indicating land increasingly more variable in topography.
2. Lightly-wooded—Larger areas of willow and poplar around the numerous lakes and sloughs, which occur.
3. Still a high percentage of land occupied and cultivated, but more larger parcels of land left in natural cover.
4. Farmsteads are quite clearly defined, generally they are located on higher ground, occurring at the rate of two per mile.
5. The fields show the effect of the increasing variation in topography. They are more irregular in shape.
6. A larger proportion of the farmland shows up as natural pasture.
7. The drainage is not clearly defined, there are numerous isolated drainage systems which terminate in shallow lakes. Also the fields show numerous pockets of water.



Land Use Pattern South and East of Edmonton Beach

GREY-WOODED SOIL AREA

The soils in this area have developed under forest vegetation, and are characterized by a thin almost absent dark surface and an ashy grey-brown sub-surface. The conditions of humidity and temperature have acted to prevent the accumulation of organic matter. The pronounced leaching has resulted in the surface soil being very poor in mineral and organic plant foods.

The topography is rolling to hilly. The presence of the Duffield moraine in this area is responsible for this rough terrain, the large amount of waste land, and the numerous lakes.

The farm practise is again mixed farming. There is more restriction in the choice of enterprise in this soil area. It is generally realized by the farmers that their soil is not very productive, that it must be improved by adding (1) organic matter, (2) nitrogen through inoculated legumes, and (3) mineral fertilizers—particularly those containing sulphur. There is still some wheat grown as a cash crop. However, the coarse grains predominate, and are marketed mostly through livestock. There is some seed production as well as a considerable area of legumes and grasses grown for hay.

The frost hazard in this wooded area is much more a factor limiting crop production than it is in either of the other two zones.

Land Use Pattern

1. Breaks in the grid road system, deep gullies and steep slopes indicate rough, hilly topography.
2. Thickly covered with bush and light timber, with darker tones indicating black spruce that occur in sloughy areas and on peat land.
3. Drainage off slopes prevents pot-hole sloughs, but water collects in low areas in the form of small shallow lakes.
4. Much of the land is not broken and cleared, and lies uncultivated.
5. Farmsteads, not sharply outlined, occur along roads at the rate of about one for each mile.
6. Interspersion of cultivated and uncultivated fields would seem to indicate considerable amount of grazing land.
7. Variation in shape and size of fields suggests the difficulties placed in the way of cultivation by the very uneven topography.



Land Use Pattern South of Lake Wabamun

General Land Use

The **Cultivation and General Slope Map** has been compiled from comprehensive interpretation of aerial photographs. Quarter sections with more than 80 acres of cultivated land are designated "cultivated" on the map, and those with less than 80 acres, as "uncultivated." General topography is indicated on the map.

The map shows the area of most uninterrupted cultivation to be generally toward the eastern end of the Municipality coinciding with the black soil zone. Most of the quarter sections in this zone which remain uncultivated are in slough or muskeg, or in some instances, are cut through by streams. This whole area should be considered as fully developed with little or no room for expansion of cultivation.

Within this eastern part there are two areas which show a considerable amount of uncultivated land. The Stony Indian Reserve delineates one area. The other area is directly south of the Reserve. The soil map shows that the Reserve area has a mixture of black and grey-black soil, and that the area to the south is grey-wooded. The topography of the Reserve area is good, while the other area shows hilly land to be prevalent. Other factors besides those of soil and topography seem to have curtailed the development of the Indian Reserve farming acreage.

The west half of the Municipality shows more uncultivated land. In the area directly west of Stony Plain town this may be attributed mainly to unfavourable topography. In the vicinity of Wabamun Lake and in the grey-wooded soil zone, generally, the added factor of poorer soil and more expensive clearing has further restricted the opening up of land to cultivation.

TABLE 2—A Comparison of Existing Farming in the Three Zones						
	Black	% Total Occupied Acreage	Grey-Black	% Total Occupied Acreage	Grey-Wooded	% Total Occupied Acreage
Total occupied acreage	149,495		165,313		115,428	
Total improved acreage	103,315	69%	94,588	57%	33,908	29%
Field crops acreage	75,476	51%	67,175	41%	24,755	21%
Fallow acreage	18,535	12%	17,458	10%	5,408	4%
Hay and Fodder crops acreage	8,692	6%	9,097	6%	4,995	4%
Natural Pasture acreage	28,730	19%	41,233	24%	64,319	57%
Total Cattle Milk Cows	6,766 3,662		7,230 3,661		4,655 2,279	
Swine	10,320		12,052		4,879	
Poultry	120,519		77,067		35,926	
Source: 1951. Census of Canada. Census Sub-Divisions 519, 520 and 521.						

THE OPTIMUM LAND USE PATTERN

Soil Rating

The value of farm land bears a close relationship to the value of its products. Therefore, the rating of a soil must necessarily depend upon its relative ability to produce. The rating used in this report is based upon the method developed by the Alberta Soils Survey from the Storie System of soil rating with some modifications to suit our Alberta conditions.

The schedule of factors used in the determination of the rating are as follows:

- (a) Soil zone (black, grey-black, grey-wooded).
- (b) Profile variation (Those conditions peculiar to a certain soil because of parent material, method of soil formation, drainage, etc.)
- (c) Texture (proportion of sand silt and clay.)
- (d) Stones (number of stones and their relative effect upon cultivation.)
- (e) Topography (level, rolling, hilly.)

However, as available information is not comprehensive enough to cover all these factors, the rating given in this report is based on:

- (a) Soil zone
- (b) Texture
- (c) Topography

An attempt has been made to correlate the observable soil characteristics to the average yield of wheat. A rating schedule was used which gave equal weight to the above factors and their effect upon the relative productivity of the various soil areas within the Municipality.

The final rating value was then applied to a utilization rating which contains the eight categories shown here below:

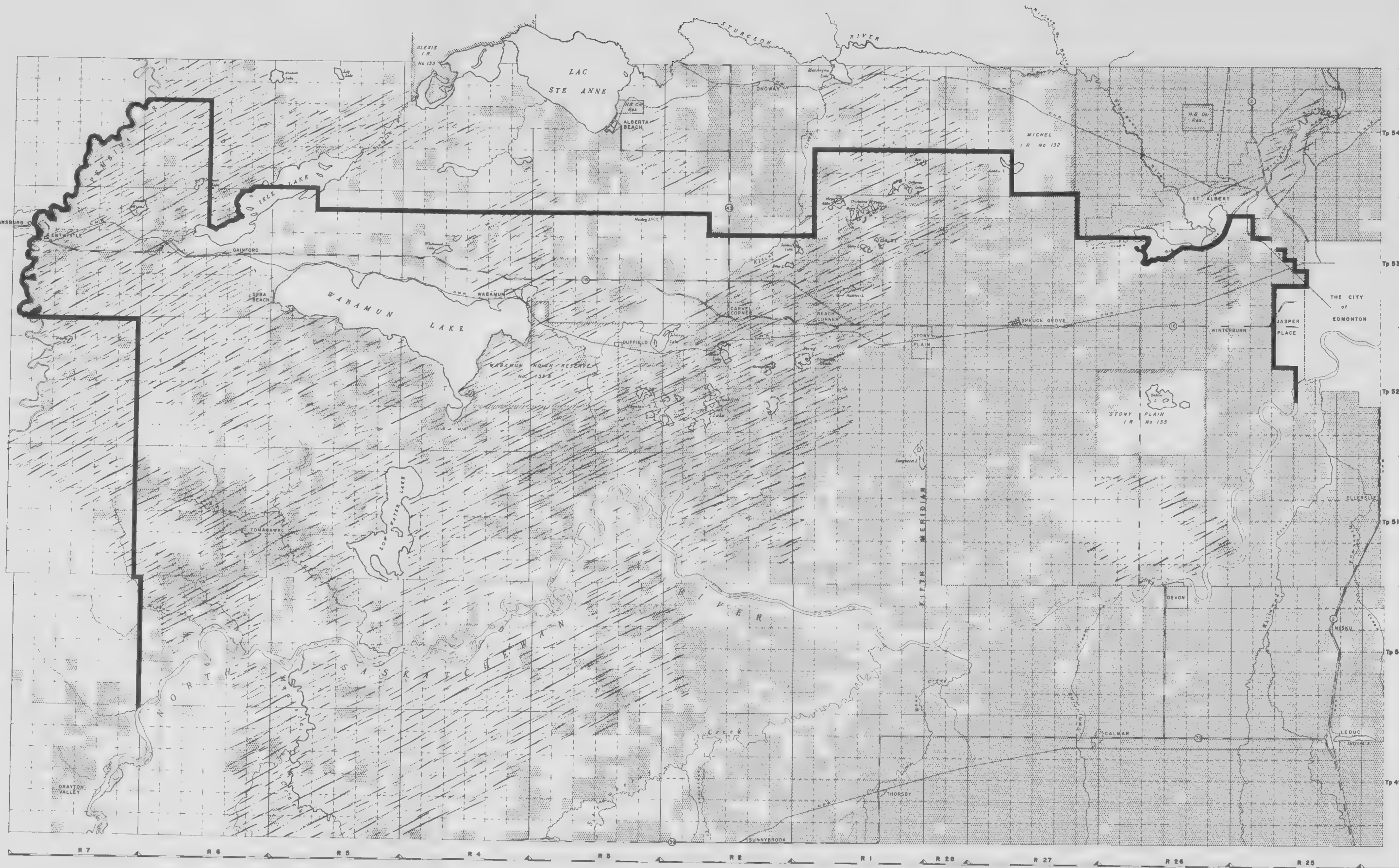
	Utilization rating	Soil rating
I	Very good to excellent arable	78 - 100
II	Good to very good arable	58 - 78
III	Fairly good to good arable	41 - 58
IV	Fair to fairly good arable	28 - 41
V	Poor to fair arable	16 - 28
VI	Good—very good pasture	9 - 16
VII	Fair—good pasture	4 - 9
VIII	Poor—fair pasture	0 - 4

The first five classifications are based on the average yield per acre of wheat; and the last three, on the number of acres necessary to support one head of cattle for one year. The following is an example of the system of rating:

A Grey-Wooded Soil, Loam Texture, Rolling Topography

The rating for zone = 60
The rating for texture = 80
The rating for topography = 50
The final rating = $\frac{60 \times 80}{100} = \frac{48 \times 50}{100} = 24$

The utilization rating would be poor to fair arable.



CULTIVATION AND GENERAL SLOPE M.D. of STONY PLAIN (& ENVIRONS)

KEY

-  **CULTIVATED LAND**
-  **UNCULTIVATED LAND**
-  **ROLLING TO HILLY**
-  **LEVEL TO GENTLY ROLLING**

M.D. BOUNDARY

NOTE: South boundary follows the
NORTH bank of the NORTH
SASKATCHEWAN RIVER



scale: 1" = 4 mi.

data: AERIAL PHOTOS 1948
ALBERTA SOILS SURVEYS
date: January 1955

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The Soil Rating map illustrates the results of this utilization rating applied to the municipal area.

Stony Plain has no soil which could be classed as "very good to excellent arable" under the rating system used, neither has the district any "poor to fair pasture." The information available and also the methods of presentation do not allow a closer definition of the particular utilization areas. There may be isolated areas of both of the above categories present. Similarly the muskeg areas could not be classified over the whole area and were accordingly left as a separate category.

The Agricultural Land Use Guide

In preparing this guide, we have considered the basis of our approach to be the conservation of resources, both human and natural. The proper use of land is a fundamental premise in the whole scheme of farmland resource conservation.

The recommendations which are made are for the long term and as such cannot altogether be concerned with the limits placed on existing farm enterprise by the present market situation. But economics have not been disregarded. On the contrary, the **Agricultural Land Use Guide** is meant to guide the farmer towards his goal of long term, profitable farming. To conserve human and natural resources means, not only to prevent waste in what we have now, but also to plan and develop for future growth.

Stony Plain is a mixed farming area. The farmer has a great deal of freedom in his choice of enterprise. He may use various types of livestock to advantage to market most of the crops he grows. The average rainfall is usually quite adequate, so there is no necessity of summer-fallowing the land to conserve moisture. A rotation system which includes perennial forage crops, and also a reduction of the amount of summer-fallow and the amount of greenfeed grown, is much preferred in a permanent system of farming for this area.

Naturally, the necessity of replenishing the soil is more evident on those farms which already have problems of soil fertility. However, even on the richest soils, if the farm enterprise is not geared to maintaining the initial productivity of the land, sooner or later evidence of deterioration of this resource will occur. Most likely at a time when the farmer will be least able to remedy the situation.

The following are the land-use classes, and recommendations.

Class 1—Mixed Grain

The best soils of Stony Plain are included. The high proportion of cultivated, very good arable land, suggests an emphasis upon the production of cereals. However, wheat should not be the major grain produced in this area. This part of Alberta produces wheat which is usually only marginal in protein content. Canada's export market depends upon a high protein wheat which the importing countries may use to bolster their own low protein wheat to obtain a satisfactory bread flour. It is obvious that if the wheat we sell abroad does not come up to expectations then our overseas market will suffer.

The coarse grains, barley and oats, yield well, and malting barley provides a good alternative cash crop to wheat. The environmental factors which act against the production of a high protein wheat contrive to produce a good malting barley. The

farmer in this area can market his produce very efficiently through his livestock. Hogs use the coarse grains to good advantage. The hog enterprise should produce a superior bacon type carcass for market. This may only be achieved by the use of good breeding stock, proper balanced rations, and marketing at the desirable weight. Improvement in the general quality of the present finished product is definitely necessary if a favourable reception for pork by consumers is to be encouraged. Poultry is also a profitable enterprise, providing a cash income from the sale of eggs and meat. Both farm bred and feeder cattle may be utilized well in marketing the coarse grains and roughages available.

Because of proximity to Edmonton, fluid milk production also has a definite place in this land-use area. But it will be limited by the high cost of land, and by the absence of marginal land suitable for "dry pasture"—that is, for the accommodation of the part of the herd, approximately one-third, not producing milk.

There is a need to emphasize that measures should be taken to maintain the soils' native fertility. A system of rotation should be followed which will include adequate use of soil enrichening crops, such as the grasses and legumes.¹ Also a general practise of incorporating all available straw, stubble and barnyard manure into fields should be carried out. The optimum size of farm unit in this area will approximate 320 acres.

Class 2—Mixed-General, Grain, Livestock

The soils are still reasonably productive. However, there is an increasing variation in topography. The average farm has a larger amount of land which is unbroken, and also land which is marginal. The emphasis in farm enterprise is more equally distributed between grain and livestock production.

Again the coarse grains should be the major cereals grown. Practices advocated for Class 1 cereal production are valid in this class as well. Fluid milk production is ideally suited to this land class, particularly for those areas within close reach of Edmonton. The combination of fairly productive soils with other land which must be used as pasture and hayland, present a good opportunity to utilize dairying to obtain the most out of the farm unit. Hog raising is also an enterprise which will fit well in this land-use class, possibly in combination with a limited beef herd or some dairy cattle for cream sales. Sheep production should not be overlooked. These animals provide a dual source of revenue, the sale of wool and sale of lambs. The flock will utilize land which cannot be used for any other purpose. There is one specific drawback however, and that is the losses sustained from dogs and coyotes. This necessitates proper fencing and also possibly the provision of woven wire corrals to keep the sheep penned during the night.

Soil management in Class 2 must emphasize the maintenance of the organic matter and fiber content of the soils. The more rolling topography and the sandy and clayey textures of the soil in some areas indicates that unless the organic matter is maintained, water erosion will take place. The rotation system discussed in Class 1 should be followed, with more emphasis placed on growing legumes and very much less on summer-fallow. These soils will respond well to the application of ammonium phosphate fertilizer together with sulphate. The optimum size of farm unit is about 320 acres.

¹ See—W. E. Bowser and A. G. McCalla, **Cropping For Profit and Permanency**, University of Alberta, 1950.

Class 3—Mixed-General, Livestock, Grain

This land-use class has soils of only marginal fertility, with the exception of those directly west of Stony Plain, which are "fair arable" and border on the quality of those in Class 2. Hay and pasture must take a much higher proportion of the crop land. Coarse grains should be almost exclusively grown and in most parts of this land-use class, wheat should not be grown at all. Small seed production and malting barley should take the place of wheat as the cash crop. The topography is mostly rolling. There is consequently a large proportion of waste land and land which must be left as natural pasture in each section.

Beef and dairy cattle are the livestock best suited to the farm enterprise here. Hogs, while profitable under favourable market conditions, should have less emphasis in Class 3 than in Class 2 because of limited production of feed grains, on the one hand; and on the other, because of the increase in the proportion of marginal and sub-marginal land which finds its most economic use in grazing.

The farmer in this land-use class is faced, not so much with maintaining the native fertility, as with improving productivity, and profitability. The growing of legumes must be an essential part of farm management together with the use of fertilizers containing sulphur.

In planning a rotation for this class, the farmer would be well advised to seed down the land to legume and legume grass mixtures for about four years out of every ten. Summer-fallowing should be dispensed with except for some special conditions which demand its use. Care should be taken to maintain and increase the organic matter and fiber content of the soils and so decrease the possibility of erosion. The optimum size of farm unit for this area should be between 320 and 480 acres depending upon the proportion of cultivatable land available.

Class 4—Mixed-Livestock

The land in this class is definitely sub-marginal for field crops. The topography is rolling to heavily rolling and the soils are typically grey-wooded and lacking in fertility. The farming enterprise must be extensive, allowing for the utilization of a large amount of land which can only be used as natural pasture. Beef cattle will necessarily be a primary factor in the farm business. There is a place for some dairy cattle but for the most part this will be limited to shipping cream because of the remote position of this land in relation to the city. The crop land available should be seeded to legumes and grasses as well as to some of the feed grains. Small seed production will offer an opportunity for a cash crop. The farm management measures suggested for Land Class 3 are valid in Class 4 as well.

More emphasis will have to be placed on improving of the soil if reasonable crops are to be obtained. This land-use class is characterized by more extensive farming. The optimum size of farm unit probably will be 480 acres or more.

Class 5—Livestock-grazing

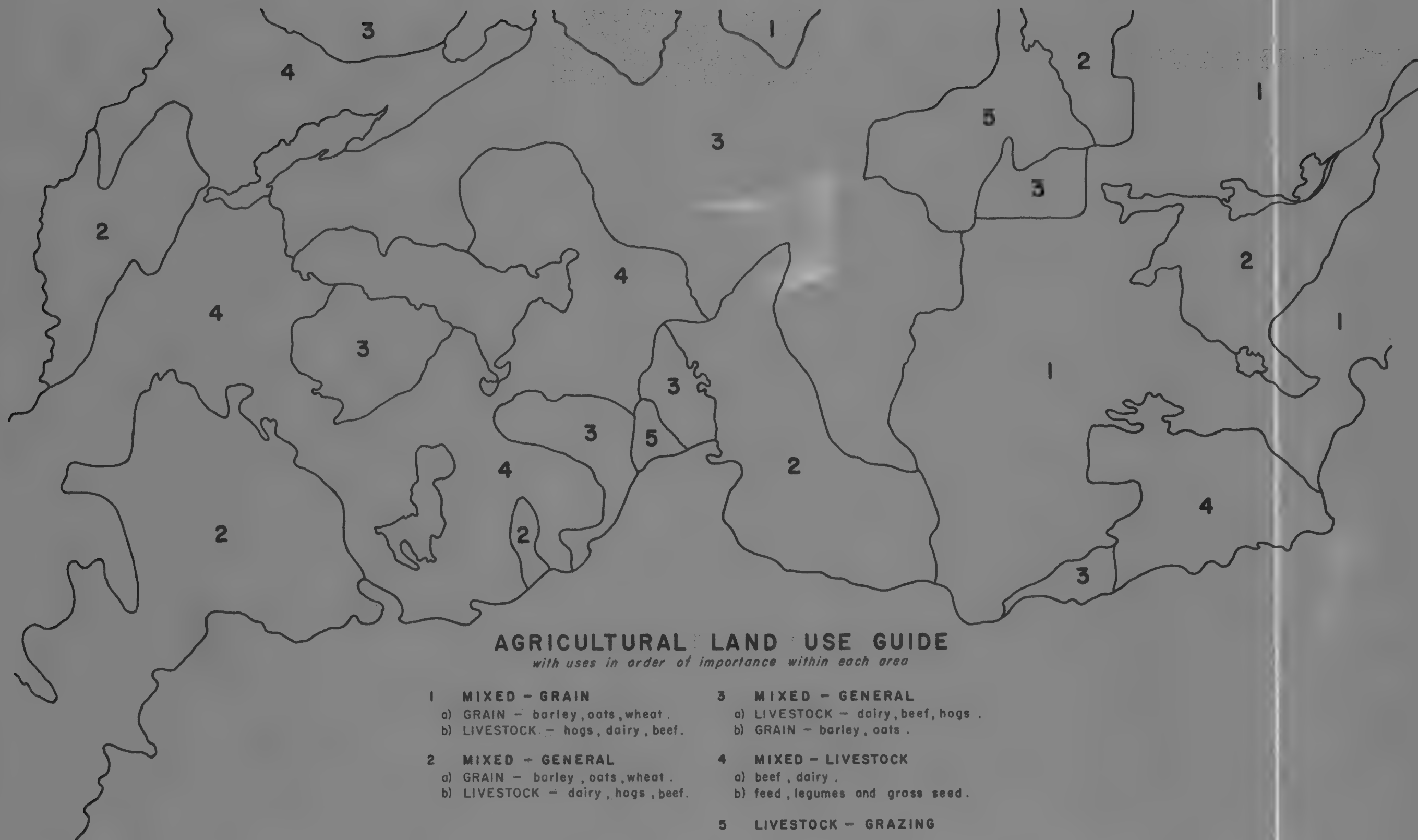
This class includes all the land which by reason of unfavourable topography and light texture should be entirely left in natural cover. There may be some isolated areas which can be cultivated, but generally this class is non-arable, and suitable for grazing only. The optimum size of farm unit in this area will be 640 acres or more.



Rolling farm land in the transitional soil area just west of the Town of Stony Plain



Natural pasture in the Mixed-General Use Area a few miles east of Wabamun



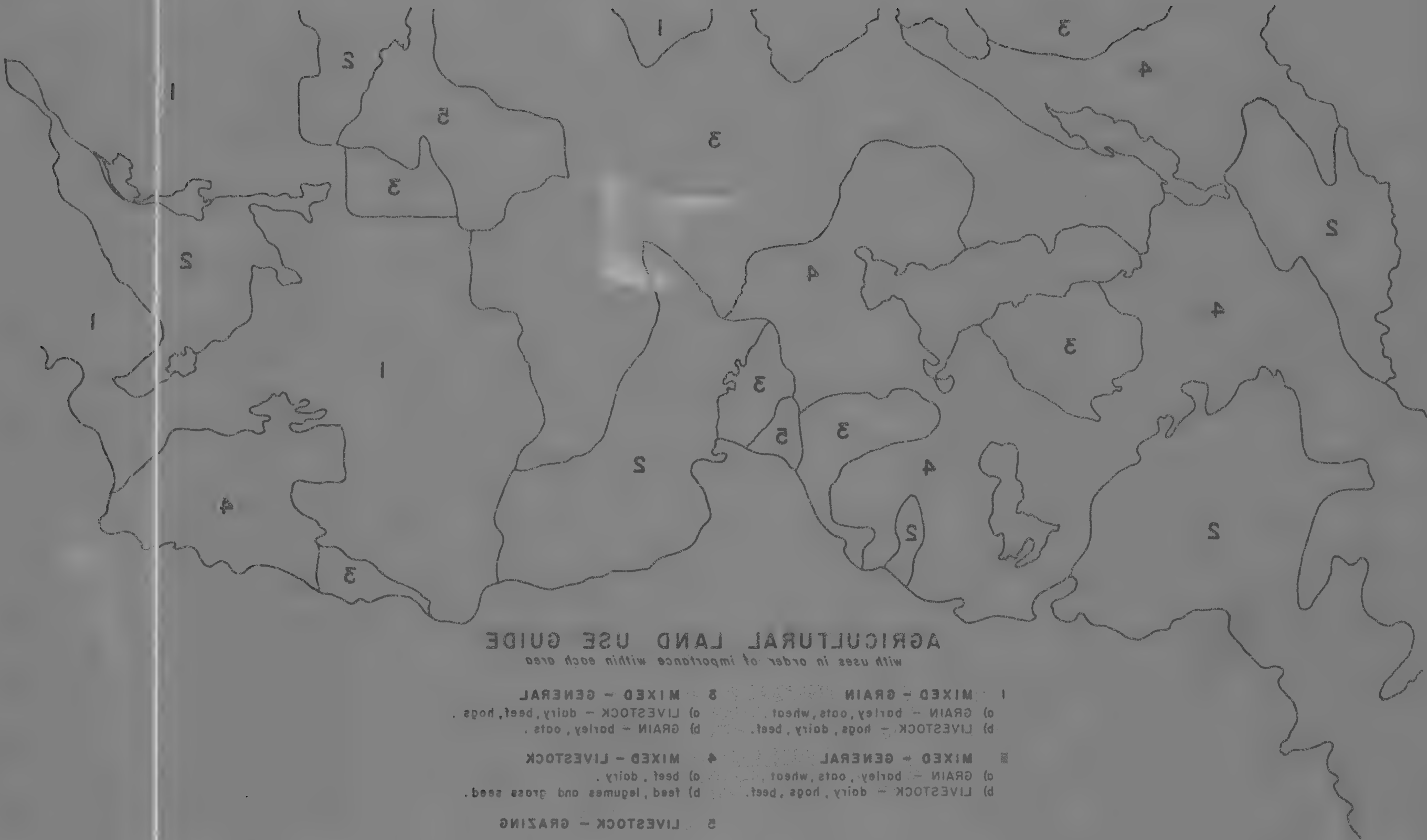
2 LIVESTOCK - GRAZING

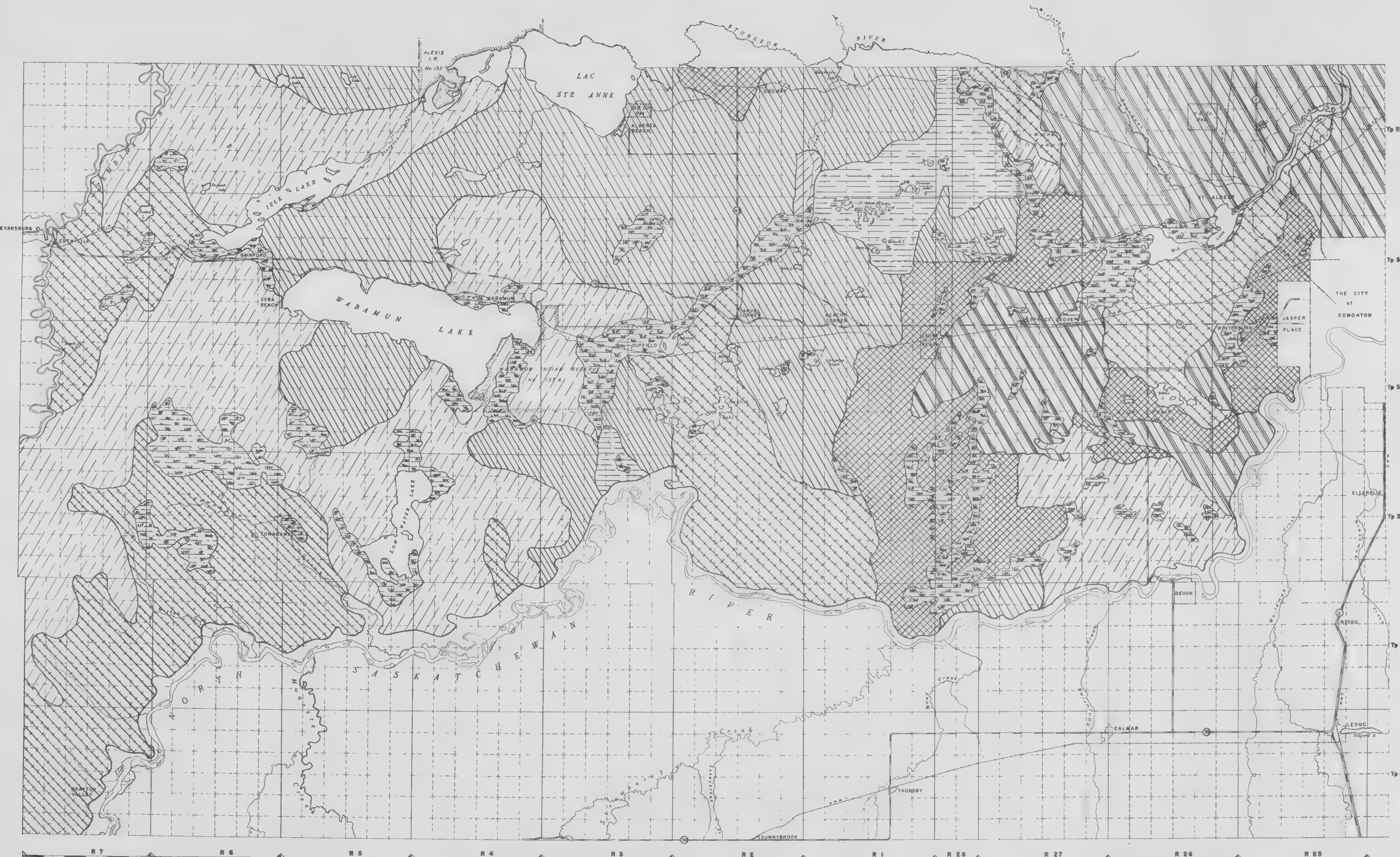
3 MIXED - GENERAL
a) GRAIN - barley, oats, wheat, etc.
b) LIVESTOCK - dairy, hogs, beef, etc.

4 MIXED - GENERAL
a) GRAIN - barley, oats, wheat, etc.
b) LIVESTOCK - dairy, hogs, beef, etc.

AGRICULTURAL LAND USE GUIDE

With uses in order of importance within each area



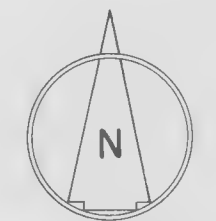


SOIL RATING M.D. of STONY PLAIN (& ENVIRONS)

- KEY**
-  GOOD - VERY GOOD ARABLE
 -  FAIRLY GOOD-GOOD ARABLE
 -  FAIR-FAIRLY GOOD ARABLE
 -  POOR-FAIR ARABLE
 -  GOOD-VERY GOOD PASTURE
 -  FAIR-GOOD PASTURE
 -  MUSKEG

NOTE: i Class I soils (very good - excellent arable) do not occur in this area.

ii River bottom soils vary in arability.



scale
0 1 2 3 4 miles

data: ALBERTA SOILS SURVEY
date: November 1955
EDMONTON DISTRICT PLANNING COMMISSION

PRESENT AND PROPOSED FARM LAND USES

A sample of 50 farms from each of the black, grey-black, and grey-wooded areas, was obtained from records kept by the elevator companies. These records yielded data concerning acreage sown to grain, pasture, grass and legume hays, acreage in summer-fallow, and uncultivated acreage on each farm. A comparison of these categories of land-use on individual farms with what is recommended by authorities, provides an indication of the gap between agricultural theory and practice in the Stony Plain area.

The material in Table 3 indicates certain very definite weaknesses in farm management in the Stony Plain area. Certainly the use of 4.8 percent of the cultivated acreage of the black soils for the soil enrichening crops (grasses and legumes) is absolutely inadequate for the protection of the soil's native fertility. The amount of summer-fallow is much too high. If this fallow acreage was brought in line with the recommendations and if the acreage thus released was seeded to grasses and legumes, the area would be well along the way towards a system of permanent agriculture. The present farming practise is definitely depleting the soil, and if continued will result in the loss of this rich natural resource to future generations.

The sample farms on grey-black soils show a larger proportion of hay and pasture crops than those on the black. However, the percentage is still much too low and again the amount of summer-fallowing done is very excessive. Some parts of this area are already showing signs of soil depletion and these indications will increase in magnitude. Certainly steps should be taken now to bring the established practise more in line with the recommendations.

TABLE 3—Farm Land Use—Proposed and Actual, Three Farm Zones

Soil of Farms	Black		Grey-Black		Grey-Wooded	
	Proposed	Actual	Proposed	Actual	Proposed	Actual
Practice—as % of Cultivated acreage						
Grain	44.4%	64.3%	44.4%	57.2%	54.2%	57.7%
Fallow	11.2%	30.9%	11.2%	30.2%	nil	17.9%
Tame Pasture, Legumes and Grasses	44.4%	4.8%	44.4%	12.2%	45.8%	24.4%

Source: W. E. Bowser and A. G. McCalla: **Cropping for Profit and Permanency**, University of Alberta, 1950. Edmonton District Planning Commission Surveys—July, 1955.

Grey-wooded farming demands a rigid adherence to a policy of replenishment and improvement of soil fertility. The present practise as indicated by the fifty farm sample, leaves much to be desired. There is no need of summer-fallowing in this area, except where special circumstances demand it. Successful farming here requires a farm population which is well aware of the limitations of their soils and a full knowledge of the measures to be taken to overcome these deficiencies.

Other data from these sample farms indicate that generally the coarse grains have become the major cereals grown in the Stony Plain area. However, the grey-wooded area has still 15 percent of its grain acreage sown to wheat. This should be reduced drastically. Some other crop such as grass and legume seed or malting barley should supplant it as the cash crop.

EXPANSION POSSIBILITIES

Analysis of the future potential must necessarily be tied to a consideration of the limitations of the individual land-use classes.

Land-use Classes 1 and 2 may only expand by an intensification of farm enterprise—that is, for example, by a major change from predominant grain production to a predominant livestock production such as dairying, which will require a much larger labour force per farm unit.

Land-use Classes 3, 4, and 5 contain the major part of the still uncultivated acreage in the Municipality. However, as this is also the area of marginal and sub-marginal fertility characteristic of the grey-wooded soils, any expansion in farming acreage here must be conditioned by a consideration of the advisability of breaking up a particular area of land.

The conservation of human resources is equally as important as the conservation of land. In the past many useful lifetimes have been wasted in the futile effort of hewing out of the wilderness an economic farm unit in those areas, which if the truth were known, had little or no possibility of producing other than a bare subsistence even when developed fully. The large amount of land in these areas which has reverted to the Municipality for taxes gives some indication of the hard work and heartbreak which must have gone into early settlement.

The provincial government has now taken steps to set up a Conservation and Utilization Committee which will study and advise the Municipalities on these problem lands. Land Classes 3 and 4 in Stony Plain have problem areas within them and as such they should receive particular attention. Certainly, the inference is not that all farming in these areas is of a precarious nature, or that even a large part of it is, but, that the farming demands an awareness of the problems inherent in the soil, topography and climate and that proper education is necessary on how these problems may be met and overcome.

It may be safely said that in no other farming area of the province is the necessity for special agricultural extension work more apparent. Nowhere else will the results of wise counsel by these workers be more evident.

THE GREY-WOODED AREA

The problem of land-use in the grey-wooded soil area is twofold, namely to determine, as in the other soil zones, the pattern of profitable agricultural activity which is most consistent with the preservation of its long-term productivity; and because it is still to some degree a pioneer area with unused arable and pasture land—to determine how much and where additional land should be farmed.

Crop experiments and economic studies have pretty well indicated how the first problem may be solved.¹ We know that a farm in the grey-wooded area has a fair chance of success if it embodies the following features:

- Total farm unit - - - - 320 acres
- Cultivated land - - - - 75 A. minimum, preferably 100 A.
- Type of farming - - - - mixed, livestock
- Crop rotation - - - - 5 year—grain (barley)
 - grain (oats)
 - grain (barley)
 - clover
 - clover (broken)

Annual application of sulphur-bearing fertilizer (e.g. ammonium sulphate)

- Livestock - - - - - Cows for cream sales
- Beef cattle and/or hogs
- Poultry and eggs

The plan will accept this evidence and concentrate on the second major land-use problem.

Deciding how much land should be brought under cultivation in the grey-wooded zone of Stony Plain, and precisely where, is, market considerations apart, essentially a problem of municipal economics. A measure of the economic problem in this pioneer area is obtained by examining the balance of municipal taxation revenues and public works expenditures in the grey-wooded soil zone and in the high-income, black soil area—as in Table No. 4.

¹ *Pioneer Farming and Municipal Finance in the Sangudo-Winfield Area of Alberta, 1941.* B. K. Acton and C. C. Spence, July 1947.
Wooded Soils and Their Management, Bulletin 21, University of Alberta, 1948.

TABLE No. 4—Selected Balance of Municipal Revenue and Expenditures by Soil Areas (Six Year Average 1948-52, and 1954)

REVENUE—Municipal Tax Only

Soil Area	1 Total Acres	2 Cult. Acres	3 Uncult. Acres	4 Ass. Value Cult. Acre	5 Ass. Value Cult.	6 Av. Mun. Mill Rate	7 Revenue Cult. Land	8 Rev. per Cult. A	8 as % of C.
Black Soil Area Division 2 and 3	189,440.	132,160.	57,280.	23	\$3,039,680.	25.5	\$77,511.	\$.586	160%
Grey-Wood Soil Area Division 4 and 5	270,720.	70,880.	199,840.	11	779,680.	25.5	19,882.	.28	47%

EXPENDITURE—Public Works

Soil Area	A Cultivated Acres	B Public Works Expenditure	C Expend. per Cult. Acre
Black—Division 2 and 3	132,160	\$ 48,323.	\$.365
Grey-Wood—Division 4 and 5	70,880	41,580.	.585

Source: Financial Statements, Municipal District of Stony Plain, 1948 - 1954.
 L. J. Miller, Secretary-Treasurer, Municipal District of Stony Plain.

Note: Figures for 1953 are not available on an electoral division basis.
 Maps, accompanying text, shows approximate conformance of soil zones with electoral divisions.
 Figures for Division I are excluded because public works expenditures reflect non-farm, as well as rural developments, and so cannot be attributed to cultivation as in the other divisions.

Revenue and Expenditures have been reduced to a "cultivated acre" basis, because we are interested in contrasting the yield in municipal revenue from each acre with the cost of providing and maintaining roads for each improved acre, which is the major municipal cost and arises directly out of the improvement of land. It is interesting to observe that to provide and maintain roads, it costs twenty-two cents more per cultivated acre in the grey-wooded soil zone than in the black.² The physical fact underlying this financial fact may be observed in the map of **Major Roads and Settlement**, in which there is a striking contrast between the sparse settlement along roads in the western part of the Municipality, and the relatively dense pattern of farmsteads in the black soil area.

From the figures in Table No. 4, it will be observed that— a) more than enough revenue is collected from the cultivated land in the black soil area to pay for public works; and that— b) in the grey-wooded area, revenue from cultivated land covers only 47% of public works expenditure.

To establish the western divisions of the Municipality on a sound financial footing requires, obviously, that revenues and expenditures per acre be brought into balance. Since revenue per cultivated acre is fixed by productivity, this adjustment can only be brought about by reducing expenditures per cultivated acre. Realistically, this can be achieved if a sufficient number of additional acres are cultivated along roads that are already built, or expressed in financial terms, if additional revenue can be obtained from the area as a whole without offsetting expenditures for public works.

The number of acres required to achieve balance between revenues and expenditures may be determined in this manner:

- A. Assume as a fixed annual expenditure, the six-year average of \$41,580. (since additional acres are added along existing roads and do not cause additional expenditures).
- B. Divide \$41,580. by an expenditure per acre equal to revenue per acre, that is, by \$.28.
- C. The result of this calculation gives us a figure of 148,500 A.
- D. Since 70,880 acres are already cultivated in the grey-wooded zone, the remainder—77,620 A—would have to be added to bring public works expenditures per cultivated acre down to \$.28, that is, into balance with revenue per cultivated acre.

In the light of the above analysis, selection of land for cultivation is one of the major functions of the general plan. The grey-wooded area was, therefore, examined with a view to finding along improved roads, uncultivated arable and pasture land, well-drained and not excessively hilly. Studies of general land-use, soils, and the location of roads in relation to settlement (see appropriate maps) were supplemented by intensive, on-the-spot investigation of prospective lands. The following are a few illustrations, with fields notes, of the type of land available:

² For convenience, the term "Grey-Wooded Soil Area", as used in the text, refers to the area of electoral divisions 4 and 5, in which there are also small areas of degraded black soil. For boundaries of electoral divisions, see map—Part 1—M.D. of Stony Plain in relation to the Edmonton district.



Sec. 21 and 22-51-4-W. 5

Land is rolling to hilly.

Excellent pasture land.

Farm immediately south (in photo) a prosperous operation—dairy, hogs, beef, poultry, eggs.



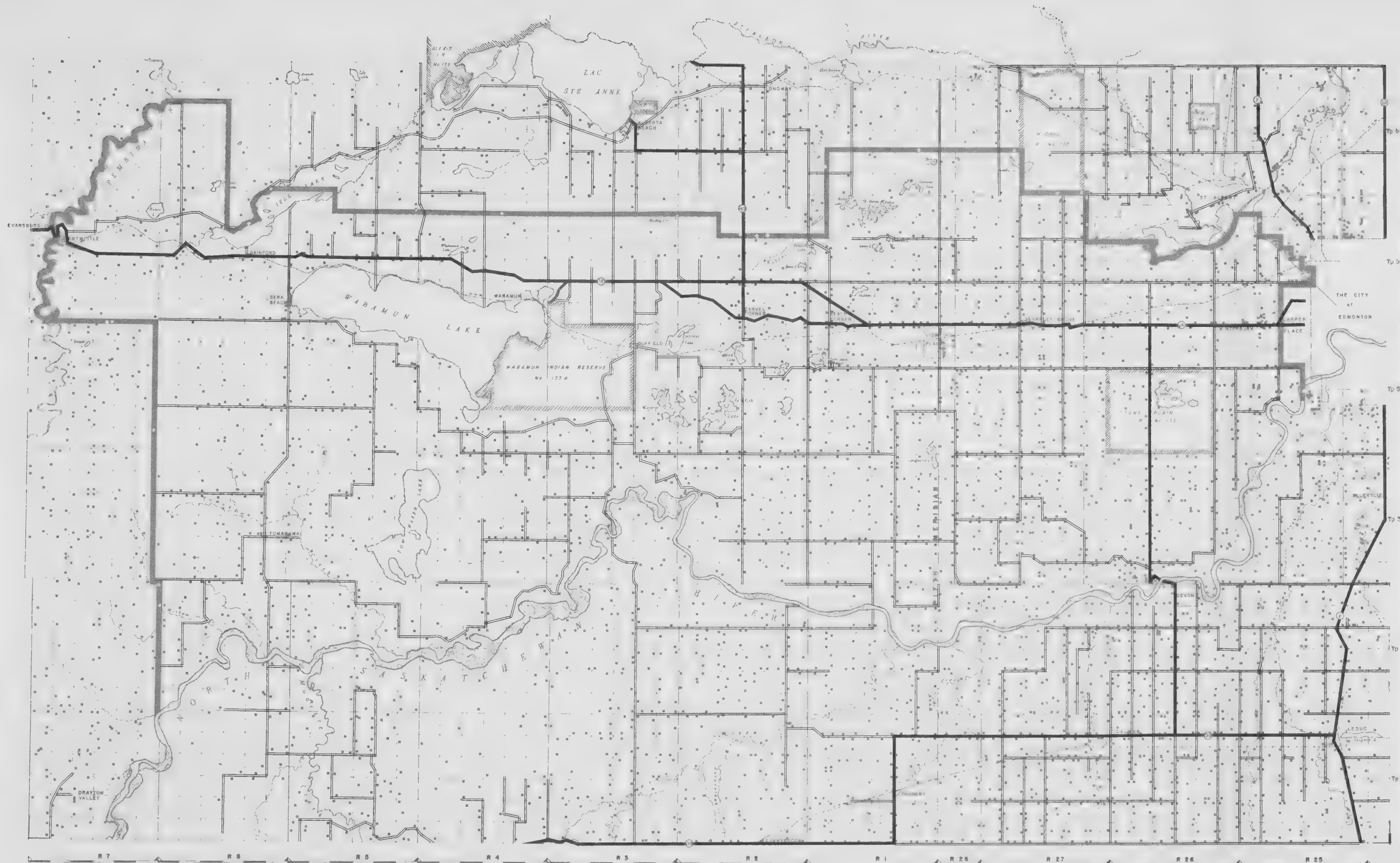
Sec. 34-50-4-W. 5

Level, undulating land.

N.W. ¼ farmstead, good condition with about 60 acres cleared and cultivated.

Dense cover of young trees—no swamp spruce in sight.

Ravine runs through N.E. ¼.



MAJOR ROADS AND SETTLEMENT M.D. of STONY PLAIN (& ENVIRONS)

KEY

- HIGHWAYS**
- MAJOR RURAL ROADS**
- FARMSTEADS**

M.D. BOUNDARY

NOTE: South boundary follows the
NORTH bank of the NORTH
SASKATCHEWAN RIVER



scale: 1" = 4 mi.

data : MUNICIPAL RECORDS.
DEPT. of MINES & TECH. SURVEYS, OTT.
date : January 1955

EDMONTON DISTRICT PLANNING COMMISSION



Sec. 24-53-6-W. 5

Gently rolling land, well drained.
Dense cover of young trees—poplar, scattered spruce.
Section appears fully wooded.



Sec. 12-51-4-W. 5

Gently rolling land.
Light tree cover, mainly poplar and birch.
N.W. $\frac{1}{4}$, farmstead clearing, some peat land.
S.W. $\frac{1}{4}$ abandoned farmstead, 40 to 50 acres cultivated.

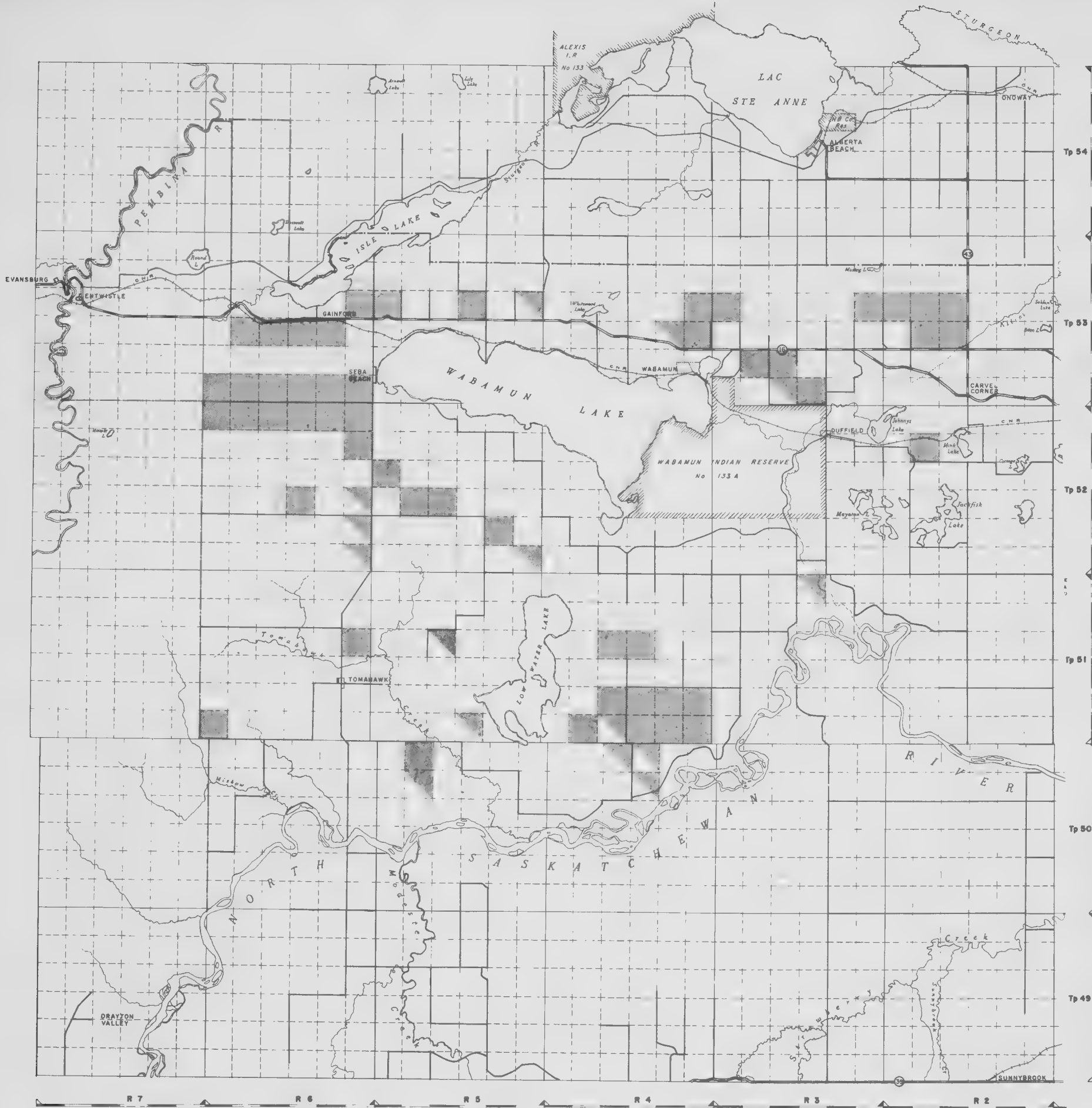
The map of **Selected Areas for New Cultivation** shows the results of the investigation. Shaded areas represent some 16,560 acres of arable land which could be cultivated without additional public works expenditure. Checking with the **Soil Rating Map**, it will be observed that the selected land falls within "good to very good pasture," "poor to fair arable," and "fair to fairly good arable."

The 16,560 acres are made up of 50 sections and 15 half-sections. A small amount of farming has already begun in the selected areas, representing in all, about 1,000 acres—so that only about 15,560 acres are added. It is assumed that 45% of occupied land will ultimately be cultivated, or 288 acres per section on average—which is the actual situation discovered in our sample survey of 50 representative, grey-wooded farms. While this estimate represents only about 20% of the additional acreage (77,620 A.) considered necessary to bring public works revenue and expenditure into balance in the grey-wood area, it nevertheless would bring significant financial benefit to the Municipality. Because additional acres are added, without offsetting expenditure, the cost per cultivated acre will, in fact, go down—from 58 to 48 cents. As a result of the deficit per cultivated acre, cost of public works over revenue from municipal tax (see Table No. 4), will decrease from \$.305 to \$.20. The difference between the deficit before the expansion of farming (i.e. \$.305 per acre on 70,880A), and after the expansion of farming (i.e. \$.20 per acre on 86,440A) represents the gain to the Municipality—that is, the amount which will not have to be carried by the rest of the Municipality, and other sources of revenue. That sum, the saving, is \$4,330, or \$43,300 in a ten-year period. Any further increase in cultivated land along existing roads would increase the gain to the Municipality.

The foregoing analysis has been put in precise terms of acres and dollars for the purpose of showing the kind of impact further cultivation might have on municipal finances. Further checking and re-checking of the grey-wooded soil area, with a larger field staff, might produce somewhat different results.

An Individual Case

Both the need, from a municipal point-of-view, and the possibility, from an individual point-of-view, of new cultivation in the grey-wooded area have been established on the basis of soil and financial analysis—and, most important, are confirmed by human experience. As we have travelled the length and breadth of the municipal territory, we have been deeply impressed by the way in which productive farms have been carved out of the primeval forest. It is true that as one travels westward, out of the black soil, one finds a greater number of struggling enterprises near the subsistence level. Here and there a farmer has looked despondently at his fields and said "the land is dead, used up". But even in what appears to be the most stubbornly unyielding country, one comes suddenly upon golden fields of barley and oats and large herds of beef cattle grazing in the pastures. It is these farms, we feel, which hold the key to the future in the grey-wooded area. If we can understand what makes them run, what contributes to their success, we may attain greater insight into the conditions necessary for effective farming in the area as a whole.



SELECTED AREAS FOR NEW CULTIVATION

western area, M.D. of Stony Plain

KEY

288 Acres per section

144 Acres per half-section

Major rural roads

Highways

M.D. of Stony Plain boundary

NOTE: south boundary follows the *north* bank of the North Saskatchewan River



scale : 1" = 4 mi.

EDMONTON DISTRICT PLANNING COMMISSION

The farm of O. L. Sveen and Son provides an interesting illustration of a successful farm enterprise in the grey-wooded area. It is situated on Highway 16, some 44 miles from City limits, between Fallis and Gainford—right next to two sections of land designated for new cultivation. Mr. and Mrs. Sveen settled on their present farm in 1932. They had come from Edmonton where Mr. Sveen had been employed as a tile-setter, and brought with them a modest capital with which to finance the early difficult years of operation. His first task was to begin the clearing of the heavy bush which covered his entire acreage of 320 acres—the first few acres by hand, and the remainder by machine. Today 180 acres of his total farm of 220 acres (reduced by sale of land) have been broken and placed under cultivation—at an average cost for machine clearing, of \$30. per acre, excluding the cost of breaking and root picking.

The Sveen enterprise developed gradually. They built their own log house and barn. They installed their own 32-volt power plant before the Calgary Power transmission line was put through at the rear of their property. At an early stage, they had the advantage of electric light, a washing machine, water pump, cream separator, and power equipment for machine repairs. In the years when cultivated land and feed were limited, crop revenue was supplemented by the sale of eggs to the Evansburg Creamery, and of poultry in Edmonton, from a flock of four hundred hens. In the last five years when the farm attained its present maturity, the emphasis has been on beef cattle. A herd of thirty-five Hereford cattle has been built up, with the stock being gradually improved by a fine pedigree bull.

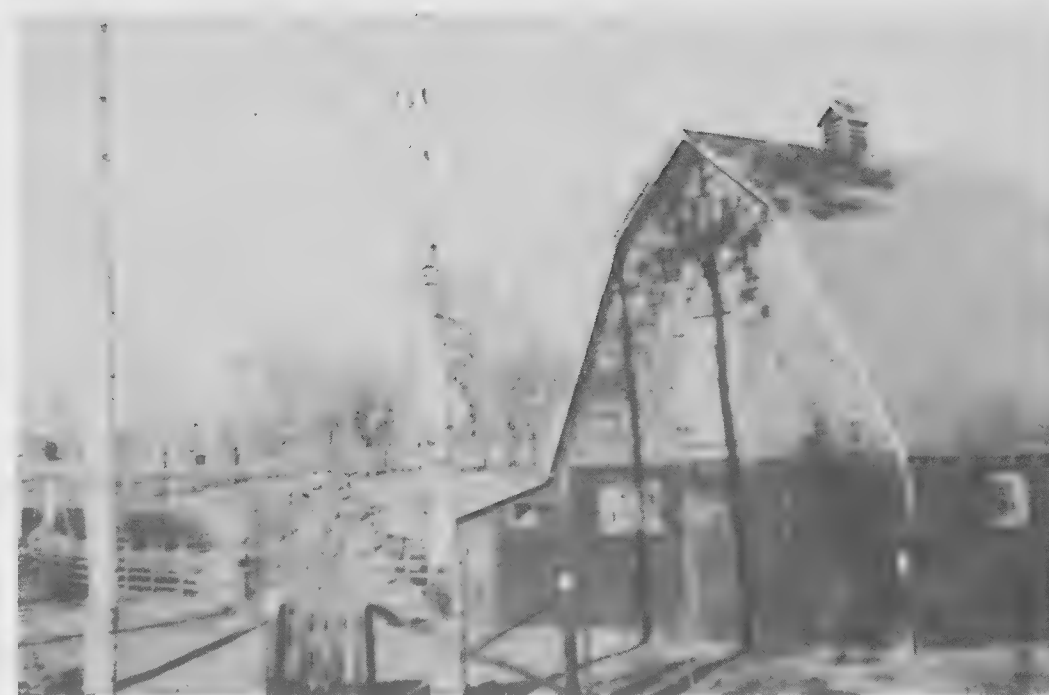
Since 1945 the Sveens have followed a rotation plan in which barley is the major crop, and in which they have introduced clover and alfalfa legumes, and ammonium phosphate fertilizer plus sulphur. There is no summer-fallow. These practices conform closely to the best available advice on grey-wooded soils.

Conditions for Success

Summing up the Sveen experience, their success seems to have been due to three major factors:

1. Sufficient capital to finance the clearing of the land.
2. Sound agricultural practice, with emphasis on the needs of soil productivity.
3. The availability of a road (Highway 16) providing access to markets the year-round.

Because the Sveen farm is typical from a soil point-of-view, these conditions which have contributed to its success provide a suggestion of the measures that will be necessary to expand the area of cultivated land along improved roads. The core of the problem is to find the means of helping the new settler overcome his initial disadvantage, the "two strikes on him", arising out of the need to clear his heavily-bushed land. The pattern of provincial assistance is already suggested in "The Land Clearing and Breaking Projects Act", governing assistance to farmers on homestead leases only. Two principles of aid are inherent in the situation, namely that assistance be great enough to clear the minimum acreage required for economic farm operation, that is, for about 100 acres per farm; and that repayment of loans be recovered out of crops. In this way the new settler could be launched, and the debt burden would be lightened by the variations of interest and principal payments, with variations in prices and production.



Sveen farmstead showing barn and enclosure



Another part of the Sveen farm—Mr. Sveen, foreground

POPULATION AND COMMUNITIES

RURAL POPULATION

An estimate of future rural population is basic to the long-term planning of the Municipality in every field of public investment. And the **Agricultural Land Use Guide** provides the basis for such an estimate. It will be observed that within the area of the Municipality there are five distinct land use areas in an agricultural sense. For each of these there is a specific acreage, (excluding bog) optimum farm size, and man equivalent (i.e. the number of men required per average farm), as follows:

Land Use Area	Acreage	Optimum Farm Size	Average Man Equivalent*
1. Mixed-grain	96,960	320	1.4
2. Mixed-grain grain and livestock	158,400	320	1.6
3. Mixed-general	104,000	320	1.7
4. Mixed-livestock	153,920	480	1.5
5. Livestock-grazing	19,360	640	1.5
Total	532,640 A.		

*Dairy Cost and Farm Management Studies, Dept. of Agriculture, Alberta.

From this basic information may be obtained an estimate of ultimate population, that is, the population when the potential of the land is realized. Dividing optimum farm size into acreage gives us the number of farm units in each land-use area. These figures are in turn, multiplied by the man equivalents to obtain the number of individual farmers in each of the five areas, and these are multiplied by 4.1 the average size of Alberta farm families to get the total population.¹ These steps may be summarized, as follows:

Land Use Area	Number of Farmsteads	Man Equivalents	Number of Farmers	Avg. Farm Family	Population
1	303 x	1.4 =	424.2 x	4.1 =	1739.22
2	495 x	1.6 =	792 x	4.1 =	3247.2
3	325 x	1.7 =	552 x	4.1 =	2263.2
4	320.6 x	1.5 =	480.9 x	4.1 =	1971.7
5	30.2 x	1.5 =	45.3 x	4.1 =	185.7
Total	1473.8	=	2294.4	=	9407.0

To obtain the total rural population, one must add to the above result an estimate of hamlet population. Taking Tomahawk and its service area as our model, we

¹ Alberta Facts and Figures 1954, Bureau of Statistics, Department of Industries and Labour, Alberta. It is assumed that development will continue to be on a Family Farm basis.

find that today hamlet population is approximately 10% of farming population. Assuming the continuation of this ratio, non-farm rural population will be 940 when the land is used in accordance with the land-use guide. Thus the Municipality with a population of about 8,300 today will have to provide in its investments and services for an increase of approximately 2,000 people, or a population of 10,347.

THE PATTERN OF COMMUNITIES AND NEIGHBOURHOODS

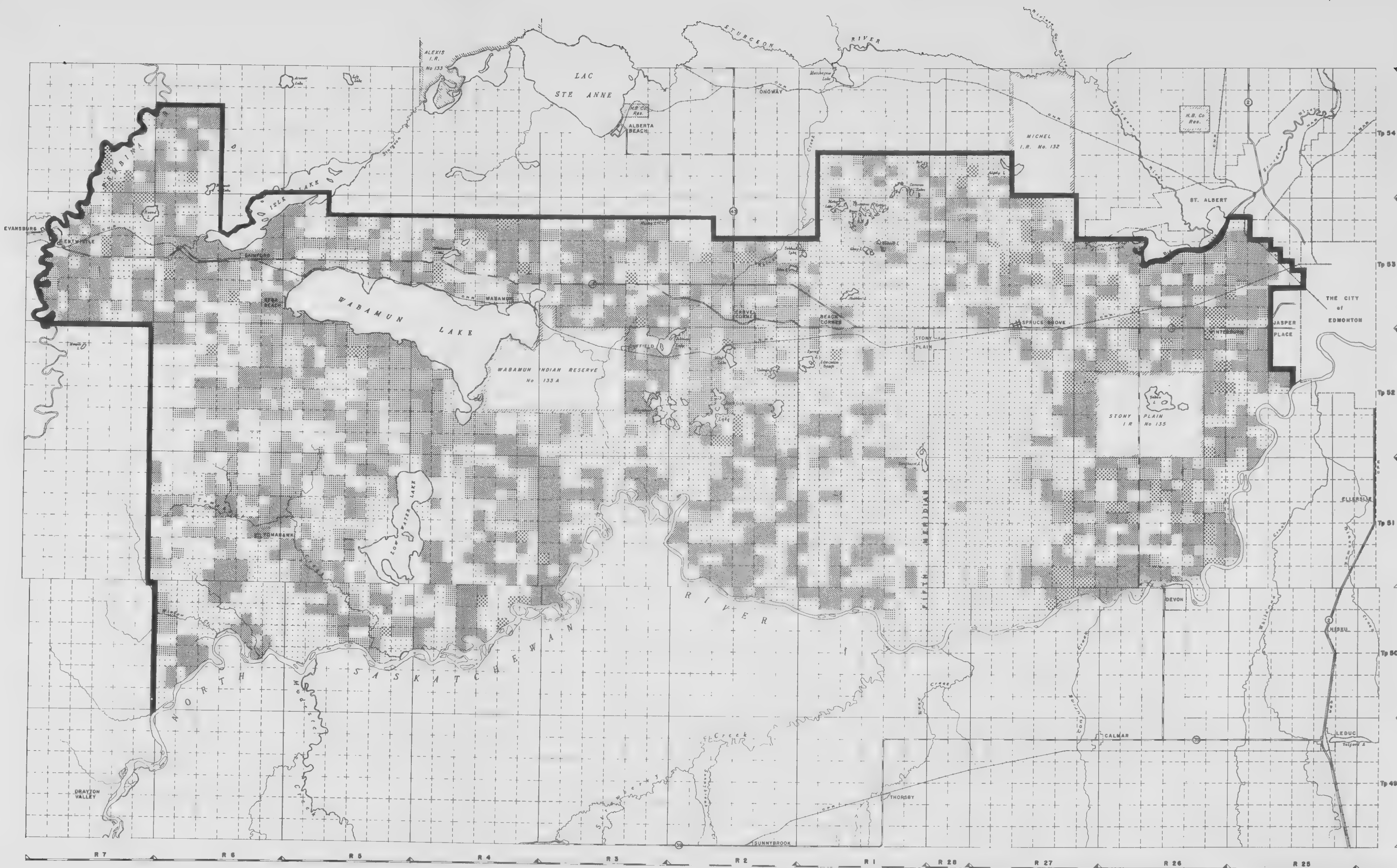
It has now been demonstrated that the rural population of Stony Plain will be 10,347, when the land is used in accordance with the agricultural land-use guide. The general plan is concerned with the facilities, social, educational, physical, that this population will need in the years ahead. Since the specific needs of the people are expressed in their common activities, we must begin by discovering the way in which the people of Stony Plain come together in various groups, and of the activities and interests which keep these groups alive.

In other parts of the American mid-west, where soil, agricultural practice and settlement are similar to those of the Stony Plain area, there developed a characteristic structure of rural neighbourhoods and communities, on the basis of the common social, religious, educational and economic interests of the farming population. "Neighbourhood", in this context, means the first group larger than the family which has social significance. It is characterized by limited size and highly developed primary or personal relationships. "Rural Community" refers to an area in which people, living on dispersed farmsteads, are drawn together, not on a personal basis, but by common interests of trade, education, recreation, religion, etc., which are physically concentrated in a village, town or hamlet. "It is a community of interests, but all interests need not be coterminous." "Both together—neighbourhood and community — may be referred to as the "community structure."¹

Examination of the map of the Municipal District of Stony Plain, with its towns and villages and hamlets suggested a similar pattern of community life, but the boundaries of country neighbourhoods and communities had never been defined. Identifying the basic units is somewhat more difficult than it is in say the province of Quebec or most of England, where the rural population is grouped in clearly-defined parishes. In Stony Plain we must literally discover the various communities before we can assess the adequacy of community facilities.

To discover the community structure of Stony Plain, a survey was conducted at each known focal point—town, village, hamlet and rural crossroads—to determine the limits of the surrounding country area from which major business, professional and social functions drew their support. By placing maps of one service area upon another—e.g. school, library, general store, church—it was possible to identify around each focal point, areas in which service limits overlapped to the greatest extent. On this basis, boundaries were drawn, as shown in the map on **Rural Neighbourhoods and Communities**.

¹ J. H. Kolb and E. S. Brunner: **A Study of Rural Society**—The Riverside Press, Cambridge, Massachusettes, 1940 and 1953 Chapters 3, 4 and 5.



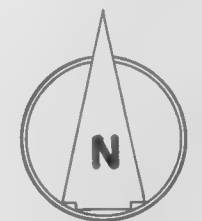
ETHNIC ORIGINS of POPULATION M.D. of STONY PLAIN (& ENVIRONS)

KEY

-  GERMANIC
-  SLAVIC
-  BRITISH
-  FRENCH
-  OTHERS & PUBLIC & CORPORATE HOLDINGS

M.D. BOUNDARY

NOTE: South boundary follows the
NORTH bank of the NORTH
SASKATCHEWAN RIVER



scale: 1" = 4 mi.

data: M.D. OWNERSHIP MAP
date: December 1955
EDMONTON DISTRICT PLANNING COMMISSION

The units that compose the community structure of the Municipal District of Stony Plain, as discovered by survey and illustrated in the accompanying map, are listed in Table 5. From this it may be seen that the community structure of Stony Plain consists of one major and dominant community centred in the Town of Stony Plain, containing within itself five neighbourhoods; three additional, general community areas—each with one or two constituent neighbourhoods, and four independent neighbourhoods. The boundaries of the general community areas of Spruce Grove, Stony Plain, Tomahawk and Entwistle are determined by the limits of their respective market areas, which form the broadest of the common interests focusing in each of these centres; and since the limits thus defined are broad, they embrace all the other important common interests which knit the communities together. Boundaries of the various neighbourhoods are determined by different sets of conditions—some by comparative isolation like Highvale, Keephills and Magnolia; some by national or ethnic background like Hansen Corner, others by religious and ethnic factors working together like Holborn, Carvel and Beach Corner, and so on.

The manner in which national or ethnic groups distributed themselves across the land is illustrated in the accompanying map on **Ethnic Origins of Population**. A glance at this map suggests that historical factors—particularly the manner in which the pioneers settled, as individuals or groups—have played a part in forming the community structure of Stony Plain. This is particularly evident in the Stony Plain Community, which was settled mainly by a group of German Austrians, who in 1890, moved north en masse, from the dry belt area near Medicine Hat to fertile, black soil lands, immediately south and east of the present Town of Stony Plain. To the group memory of early privations formed during the difficult trek northward with its co-operative cattle herding and bread baking, swamps, and child birth in a wagon; and during the first tough years of building homes and farming from scratch—have been added the welding force of institutions of church and parochial school, and of the social life built upon them.¹ In spite of a split amongst the Lutherans of German origin into different Synods—one Canadian, one American—and in spite of the Canadianization of second and third generations, one has the impression that the Lutheran group, of German origin, forms the primary Stony Plain Community—that is, the group amongst whom economic interests are reinforced by a social relationship—on a personal, almost first—name basis. This primary area is defined on the map of **Rural Neighbourhoods and Communities**.

The competitive relationship between Spruce Grove and Stony Plain, illustrated by the overlapping of their main market areas has historical roots in a very early struggle in 1892, for the right to call their respective post-offices "Stony Plain". The inhabitants of Stony Plain (at that time, Stony Plain West) convinced the postal authorities of the pre-eminence of their claim by (a) the early settlement of Hudson's Bay Company stockmen in their area (1760), (b) the marital and family status of one of their leading citizens and postmaster, Mr. John L. McDonald, in contrast to the irresponsible bachelorhood of John A. McPherson, first settler in the Spruce Grove area; and (c) of the advantages of their location, central to the whole Stony Plain agricultural settlement.²

It has not been possible to express in the map of neighbourhoods and communities, every social, economic and other interest which determines the community

structure. Each general community area, and some of the larger neighbourhoods like Duffield and Keephills, has a smaller, close-in zone of primary or personal service relationships; and Stony Plain, as the major town, has an influence beyond its main community boundary in a specialized area—an area from which families seek the larger centre for special services of high school, seed cleaning plant, municipal office or movie.

One of the striking results of the social survey, as indicated in Table 5, has been the identification of the essential institutions of the country neighbourhood, namely general store, community hall, elementary school, church and post-office. These, apparently, are the institutions which resist the trend to centralization into a few major centres, based on improved roads, the motor car, and the economic, administrative, social and cultural advantages of larger units. Factors which will continue to support some degree of decentralization in community life are the rigours of winter weather, the desire of parents to keep the younger school children close to home, the apparent refusal of people to travel very far to church services—and the essential nature of the neighbourhood core, which is by definition a group of people drawn together by close, personal relationships, such as cannot easily be formed in larger and more remote centres. The force of these factors appears to vary directly with the distance from the principal centres as evident in the fact that four of the five neighbourhoods in the Stony Plain community are incomplete in some respect, and that the most highly-developed neighbourhoods, Duffield and Keephills, are relatively isolated and beyond major influence areas of the main centres. But, generally, the persistence of country neighbourhoods continues, and so they become, along with the general community areas, an element to consider in the planning of public works, schools and social services by local, regional and provincial agencies.



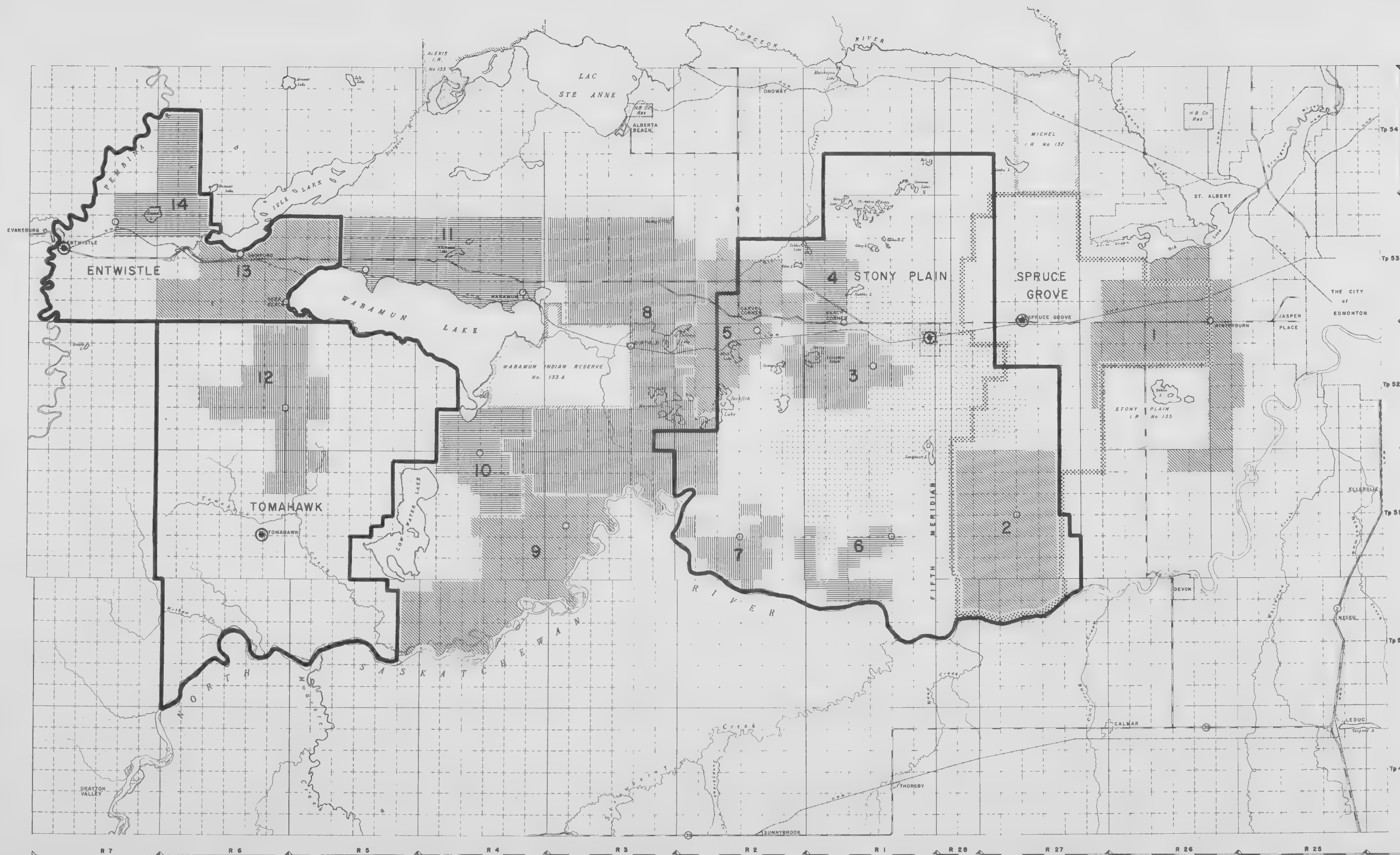
The Village of Spruce Grove, looking west along the Jasper Highway

¹ *Homesteading For God*, Lutheran Church (Missouri Synod)—P. 6-29.

² Mrs. C. R. Wood, *Address at School Pageant*—June 9, 1955.

TABLE 5—The Community Structure—Stony Plain Area

Communities and Neighbourhoods	Status	Major Functions	Supporting Rural Pop.
Stony Plain	Major Community Area	Economic (including grain elevators), Educational, Religious, Social, Communication, Professional, Cultural and Administrative	2,923
Rosenthal	Open-country Neighbourhood, within Stony Plain Community.	School, Church	156
Beach Corner Blueberry	Open-country Neighbourhood, within Stony Plain Community.	General Store, Elementary School, Church, Post-office, Highway Service	94
Holborn	Neighbourhood within Stony Plain Community.	General Store, Elementary and Junior High, Post-office	49
Hansen Corner	Neighbourhood within Stony Plain Community.	Community Hall	53
Carvel	Neighbourhood, mainly within Stony Plain Community.	General Store, Grain Elevators, Community Hall, Elementary and Junior High, Church, Post-office, and Highway Service	197
Spruce Grove	Community Area	Economic (including grain elevators), Educational, Religious, Social, Communication—more limited in range and choice than Stony Plain.	1,402
Golden Spike	Open-country Neighbourhood, within Spruce Grove Community.	General Store, Elementary and Junior High, Church, Post-office	431
Winterburn	Neighbourhood, partly within Spruce Grove Community	General Store, Community Hall, Elementary and Junior High, Church, Post-office, and Highway Service	299
	Outside Community Areas		
Duffield	Independent Neighbourhood	General Store, Services, Grain Elevators, Community Hall, Elementary and Junior High, Church, Post-office	328
Keephills	Independent Neighbourhood	General Store, Community Hall, Elementary and Junior High, Church, Post-office	250
Highvale	Independent Neighbourhood	General Store, Community Hall, Elementary School, Church, Post-office	127
Fallis-Wabamun	Duo-centred Independent Neighbourhood	General Stores, Hotel, Community Hall, Churches, Elementary School, Post-offices	127
Tomahawk	Community Area	Economic, Educational, Religious, Social, Administrative—limited in range and choice.	1,062
Horen	Open-country Neighbourhood, within Tomahawk Community	General Store, Church, Post-office	139
Entwistle	Community Area	Economic, Educational, Religious, Social, Communication, Administrative—limited in range and choice.	390 (in the M.D. of Stony Plain)
Gainford-Seba	Duo-centred Neighbourhood	General Stores, Grain Elevator, Planing Mill, Hotel, Community Halls, Elementary and Junior High, Church, Post-offices	168
Magnolia	Neighbourhood within Entwistle Community	General Store, Community Hall, Post-office	90



RURAL COMMUNITIES & NEIGHBORHOODS M.D. OF STONY PLAIN

KEY



COMMUNITY BOUNDARIES
& CENTERS (Stony Plain,
Tomahawk & Entwistle)



COMMUNITY BOUNDARY
& CENTER (Spruce Grove)



PRIMARY AREA of
STONY PLAIN



NEIGHBORHOODS

- 1 WINTERBURN
- 2 GOLDEN SPIKE
- 3 ROSENTHAL
- 4 BEACH CORNER
- 5 CARVEL CORNER
- 6 HOLBORN
- 7 HANSEN CORNER
- 8 DUFFIELD
- 9 KEEPHILLS
- 10 HIGHVALE
- 11 FALLIS-WABAMUN
- 12 HOREN
- 13 GAINFORD-SEBA
- 14 MAGNOLIA

○ NEIGHBORHOOD CENTERS



scale: 1" = 4 mi.

data: E.D.P.C. SURVEYS

date: January 1956

EDMONTON DISTRICT PLANNING COMMISSION

SERVICES AND THE COMMUNITY STRUCTURE

The general plan in its emphasis on land-use and the community structure, will provide the basis for sound policy in the provision and location of the services required by the rural community. The plan will not, however, lay down precise and comprehensive prescriptions for fields in which others are more experienced and qualified. It will rather confine itself to illustrating how the materials of the plan may be used in fashioning well-founded policies of service provision and location.

Schools

In the accompanying table (6) a comparison is made between school enrolment and classes at present, and as they will be when the land is used in accordance with the **Agricultural Land Use Guide**. It reveals the relationship between soil, land-use, population and the prediction of social needs—in this case, school facilities.

The pattern of neighbourhoods provides a basis for the distribution of new schools. Consider, for example, the neighbourhoods of Duffield, Highvale, and Keephills. A glance at the land use guide will reveal that there are several land use areas in each, and all these land use areas have, as we have seen, characteristic labour requirements and farm sizes. Having the total acreage within each neighbourhood, it is possible to estimate (by the same method used to determine the total ultimate population) what the farm population will be in each neighbourhood. And from this we may derive the potential enrolment (assuming the school population is about 25.7% of the total as at present), and the ultimate classroom need, at the provincial average of 27 per class. Proceeding in this way, we get the following populations, enrolments and classrooms for the three neighbourhoods, under conditions of optimum land use:

	Population	Enrolment	Classrooms
Duffield neighbourhood area	758	195	7.2
Keephills neighbourhood area	272	70	2.6
Highvale neighbourhood area	146	38	1.4
Total	1,176	303	11.2

In addition, the non-farm population in the hamlets will require 1 or 2 classrooms, depending on whether we assume that population in the neighbourhood centre remains static or increases with the growth in farm population. Thus 12 or 13 classrooms will be required in all when the land is used in accordance with the land-use guide.

At present there are 10 classrooms in Duffield, Keephills and Highvale combined, with 3 in the first, 4 in the second, and 3 in the third. Our analysis suggests that any additional rooms in the locality of the three neighbourhoods should be added to Duffield, which when the land is fully utilized, on an optimum basis, will require 7 classrooms for the farm population alone. Whether this is done, or whether these classrooms are distributed amongst the three centres, is, of course, a matter for the local population through its school board to decide. As long as the neighbourhood pattern is respected so that the children of each neighbourhood go to the same school, the trend to centralization may proceed, within transportation limits, with a minimum disruption of each neighbourhood as a social entity. Alternatively, if a degree of decentralization is favoured, the neighbourhood pattern provides a basis—in fact, the only basis consistent with the maintenance of long-standing, social groups.

Library Service

There is one library in the Stony Plain area. It is located in the community centre at the town of Stony Plain and managed by a library association whose combined town and country membership of 300 represents about 3% of the town-country population of the municipal district. The library, with its 4,987 volumes and a record last year of about 20 issues per borrower, very adequately serves its membership. From the viewpoint of the municipal district as a whole, however, library services have a long way to go. About twenty to twenty-five thousand volumes will eventually be required to attain the Canadian standard of 2 to 2.5 books per capita.¹ As the people of this area gradually move towards this ideal, aided by the provisions of the Alberta Libraries Act, and by the provincial supervisor of libraries, they will more and more be concerned with finding the pattern of organization that will provide the best service at the least cost.

Library authorities have noted that the effective range of service extends five or six miles from a regional library.² This is confirmed, in a general way, by the location of country members of the Stony Plain library, of whom 62% are located within 7 miles of the town (junction of Highway 16 and 5th meridian road), 76% within 8 miles and 86% within 10 miles. Because of this limiting effect of distance on circulation, library planners advocate decentralization of service points within a regional system, characterized by the centralization of administrative, technical and routine services at a key point, which acts as a clearing house of books for the whole system.

TABLE 6—Land Use, Population, Enrolment and Classrooms—M.D. of Stony Plain

Assumed Conditions	A Rural Pop.	B Urban Pop.	C Total Pop.	D Total Enrolment	E D as % of C	F No. of Classes
1. Present Land-Use	8,300	1,781	10,081	2,593	25.7%	92
2. Optimum Land-Use	10,347	2,224	12,571	3,230	25.7%	119

NOTE: 1 - A based on estimate provided by Secretary-Treasurer, M.D. Stony Plain.

2 - A based on estimate of number of farm families when land is used in accordance with the agricultural land use guide plus estimate of hamlet population.

1 - B present combined population of Town of Stony Plain, and Villages of Spruce Grove and Entwistle.

2 - B assumes urban population will be at same ratio, as at present, namely 21.5% of rural population.

1 - D based on subtraction of pupils attending school in the Division, but outside the Municipality, from the total enrolment of 3,165 (1955-56).

2 - D based on ratio established in 1 - D.

2 - E assumes that the average classroom will contain 27 pupils, as in provincial average.

¹ "Suggested Standards of Service for Public Libraries in Canada," *Ontario Library Review*, November, 1955.

² H. B. Chandler and J. T. Croteau, *A Regional Library*. American Association for Adult Education, New York, 1940.

In the selection of future service or distribution points for an expanded library service, the pattern of neighbourhoods and communities provides an important guide. An authority has written—"a geographic delineation of neighbourhoods and communities provides insights into service problems which no other information can supply. Plans for a future pattern of service can be laid out with greater assurance that few major changes will need to be made later."¹ In Stony Plain terms, this recommended pattern of service would include a regional branch in the Town of Stony Plain, related to some larger administrative and "wholesale" supply centre, tying together and serving a network of small local libraries in community halls, schools or general stores, according to local preference, located in each neighbourhood centre. Thus the general plan, with its definition of community structure provides an important footing, if not foundation, of an extended library system.

Roads

A glance at the network of main roads in the map of **Major Roads and Settlement** will indicate that the Municipality is well provided in this respect. But there still remain, important roads that require gravelling, and others, on which maintenance is lagging. The general plan will, however, not make specific proposals for road construction, because the road system of the whole planning district is now under consideration by a special committee of the Planning Commission. It would not, therefore,

seem wise at this time, to make recommendations until the work of this committee which will relate the Stony Plain road system to those of its neighbouring Municipalities, has been completed.

Until specific proposals are made, error in the location of new and improved roads may be reduced to a minimum by following the principle that "roads follow traffic movements." Main traffic movements for which the system should provide are:

- (1) from community and neighbourhood centres (focal points) to the city.
- (2) from the outer limits of productive land within each community and neighbourhood, that is, the potential service area, to focal points.
- (3) between local centres.
- (4) from neighbourhoods and communities to lakeshore recreational areas.
- (5) out of the municipal district to important outlying centres.

If these principles are followed, the farmer will have a road to market, school and milk routes will be provided, and the Municipality will obtain the greatest value for its construction dollar.

¹ Gretchen Knief Schenck, **County and Regional Library Development** American Library Association, Chicago, 1954.

THE METROPOLITAN IMPACT

INTRODUCTION

The M.D. of Stony Plain is affected in various ways by the rapid expansion of Metropolitan Edmonton. There are land uses, which although generated primarily by the urban area, occur in the rural municipality. These uses may be grouped under three main headings; highway services, smallholdings, and recreation development. Since the occurrence of these uses will increase as the urban population increases the Municipality will face an ever increasing demand for land for these purposes.

It is possible to meet this demand without reducing the effectiveness of highways, disfiguring the country-side or overburdening the finances of the Municipality. But this requires a clear understanding of the problems and the provision of a framework for efficient, orderly and attractive development. With regard to highway services and smallholdings the Municipal District has adopted effective measures. The following pages deal with these matters in some detail, giving the pertinent background information, and in some cases making specific recommendations.

The metropolitan impact does of course make itself felt most directly in those parts of the rural Municipality immediately adjoining the urban area. Here, a demand may arise for completely urban uses and services. Mutual agreement on zoning and

road pattern between Stony Plain and the City is essential if the area is to be effectively and efficiently developed.

For the Metropolitan area of Edmonton, an **Outline General Plan** has been prepared by the Edmonton District Planning Commission. Along with the other members of the Commission, the M.D. of Stony Plain has accepted and enforced this plan.

INDUSTRIAL DEVELOPMENT

The Metropolitan Area

Three important industries have located in the M.D. of Stony Plain in the past year. Inland Cement, Western Plywood, and Nadon Asphalt have located close to the main C.N.R. line about one mile west of Edmonton. The area involved is that part of Section 15-53-25-4 north of the C.N.R. main line, and it has been zoned Industrial by mutual consent of the Municipality and the Planning Commission. It is a site very suitable for and attractive to industry with one exception—the direction of the prevailing winds. Since the prevailing winds are for part of the year north-west, and residential areas lie to the south and east it is essential to take every precaution to prevent industrial dust, smoke and odour from becoming a problem.

The Municipality has asked the Planning Commission to advise it on this matter. The procedure which has been followed in these first three industrial applications, has been to request from the firms, detailed information on the type of control equipment to be installed, the expected performance standards, and the quantity of material released to the atmosphere. This information has in two cases been referred to a chemical engineer consultant retained by the Commission and in both cases his report has been to the effect that the equipment is of sufficiently high standard to meet the most exacting regulations on this continent.

It would therefore appear that the measures being taken by the various firms are adequate; and if other industries moving into the area are required to meet the same standards, no air pollution problem should present itself.

Industry Beyond the Metropolitan Area

Just west of the hamlet of Wabamun the Calgary Power Company is constructing a new power plant, which is expected to be completed by September, 1956. The capacity of the plant in the first stage of development will be 88,000 H.P. but preliminary plans have been prepared for expansion up to 400,000 H.P. The plant will employ approximately 20 persons, although at some indeterminate future date when it should have to convert from gas to coal as fuel, employment would rise to approximately 75.

The first group of permanent workers will be housed in a newly subdivided residential area in the south-east part of the company property, close to the existing hamlet with easy access to the main road, and the plant.

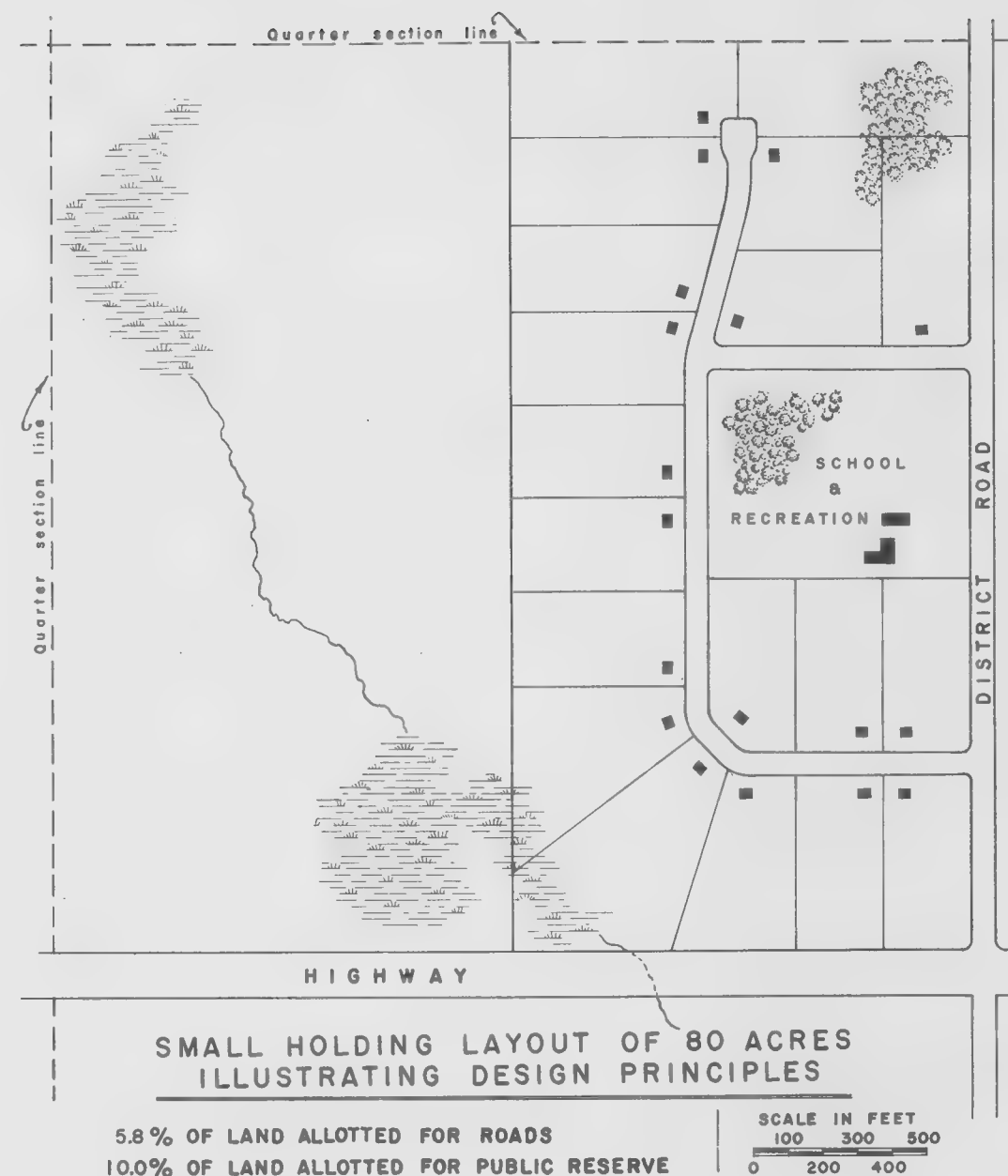
The location of an Industrial undertaking in an area raises the question of the merits of the area for other industrial development. The advantages of this area are: (1) abundant water, (2) Gas, coal and power supplies, (3) C.N.R. main line trackage, (4) Main Highway 16, to the north, (5) Good location for raw materials coming from the west. The limiting factor is the extensive distance from any area of large population, or industrial concentration. Viewing the merits and the shortcomings it seems feasible that some types of industries may find the area attractive.

In such an eventuality there are two basic requirements which should be met.

1. That Lake Wabamun be kept free from all pollution due either to sewage or industrial wastes. This is of importance because the Lake feeds into the North Saskatchewan River upstream from the Edmonton water supply; because it is important that fish life be maintained both for reasons of commercial fisheries, and the needs of the Indians in the Reserve to the east; and lastly because the Lake is used for recreational purposes.
2. That the development be such that it will not unduly devalue the existing recreation and resort aspects of the area.

It may be noted that the Calgary Power development presents no possibilities of water pollution.

The potential for industrial development in other areas of the Municipality will be studied in detail in the Regional Plan.



SMALL HOLDINGS

Since the questions raised by small holding development are common to all the rural Municipalities in this area, a special Small Holdings Committee was set up by the Edmonton District Planning Commission to advise on matters of location, density, design and municipal costs. The personnel of the committee included representatives from the Municipal Districts of Stony Plain, Morinville, Leduc, and Strathcona. Also represented were the Provincial Departments of Agriculture and Education; and added information was provided by the Veterans Land Act Administration. The findings of this committee were embodied in a report published in 1954. Briefly summarized, the recommendations were:

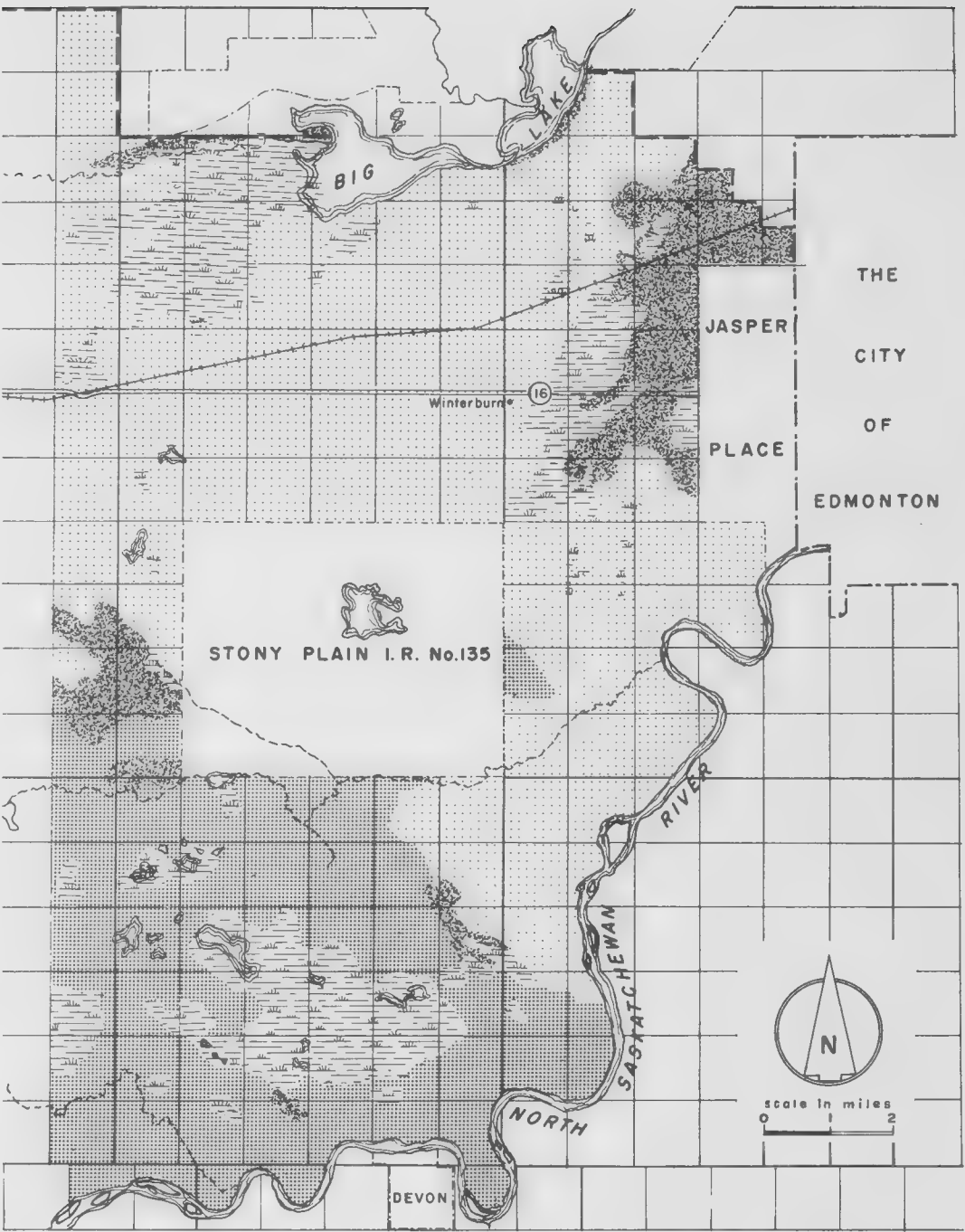
General

Small holdings are considered to be a specific type of development, meeting a specific need and not a transitional stage in the conversion of an area from rural to urban use.

Specific

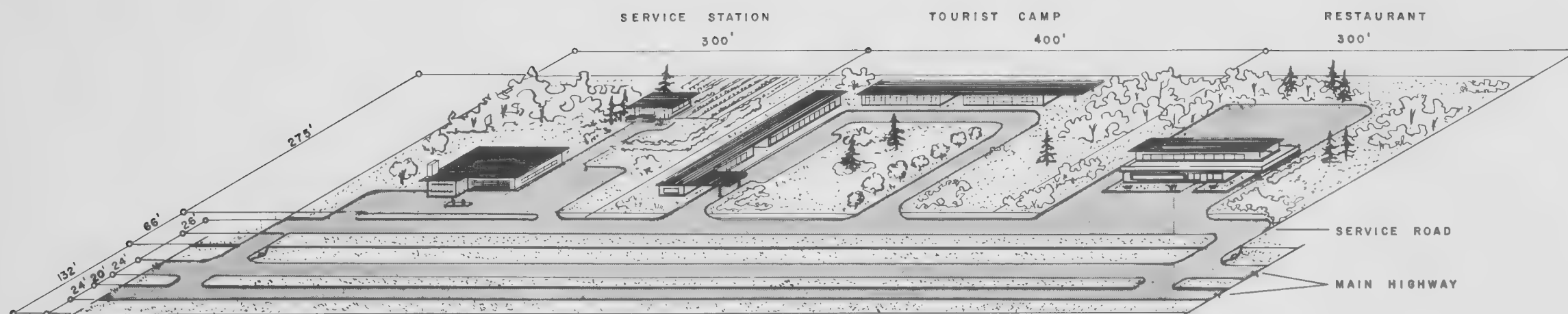
1. A small holding parcel shall be not less than 3 acres, nor more than 20 acres.
2. Small holdings shall be grouped, on the basis of compatibility and soil requirements, into 4 types—(1) Cultivating, (2) Livestock, (3) Fur farming and (4) Miscellaneous, e.g.—bee-keeping, rabbits. Groups 1, 2 and 3 shall not be mixed in a single subdivision.
3. Small holdings shall be within approximately 10 miles of the perimeter of the metropolitan area.
4. Each type of small holding shall be located on suitable soil. (see map)
5. A small holding subdivision in the open country should contain at least 40 acres but not more than 80 acres.
6. There should not be any lower or upper limit to the size of small holding subdivisions on land immediately adjacent to the traditional hamlets.
7. In areas of scenic appeal, close to creek, coulees, rivers, lakes and wooded areas, summer cottages and country residences should be permitted. There is no easily defined upper or lower limit to the land allowable for subdivisions as every proposal will have some special condition and should be treated on its own merits. The following minimum size lots are determined by Provincial Health Regulations: Cottage or country residence lots, with cesspools or pits, but with no wells, shall be at least 75 ft. by 150 ft.; Cottage or country residence lots with cesspools or pits, with wells, shall be at least 75 ft. by 175 ft.
8. Tree-cover shall be maintained to the greatest possible extent in cottage and country residence subdivisions.
9. Subdivision layouts should be guided by the 5 design principles outlined below (see diagram):
 - (1) Location on highways or main district roads.
 - (2) An internal loop road (minimum—66 ft.) with two accesses to the district road, where feasible.
 - (3) Centrally located public reserves on land suitable for school construction.
 - (4) Adaptation of design to the land, giving due consideration to contour, wooded areas, surface drainage, low marshy ground, and scenic qualities.
 - (5) Shape of parcels adapted to the type of small holding enterprise.

These recommendations have been accepted by the Municipal District of Stony Plain as the basis for its policy on small holding development and have proved to be a satisfactory guide. To date, this development has not been extensive, amounting to 92 parcels in the past 3 years. It is expected, however, that the demand will continue with the expansion of the metropolitan area, particularly the establishment of industries in the northwest industrial zone. And then the Municipality, in its efforts to maintain a good standard of building and site development, will face a major administrative problem.



SOILS		TYPE OF SMALL HOLDING RECOMMENDED	
	GOOD ARABLE LAND		CULTIVATING, LIVESTOCK, BEEKEEPING, ETC.
	POOR LAND		FUR FARMING, BEEKEEPING, ETC.
	POORLY DRAINED LAND	]	NO SMALL HOLDINGS RECOMMENDED
	MUSKEG		

NOTE: This is a generalization of the soils map for small holding purposes.



MODEL LAYOUT FOR HIGHWAY COMMERCIAL DEVELOPMENT
WITH SERVICE ROAD ACCESS

HIGHWAY SERVICES

Highway 16, the main western Provincial connection to Edmonton, runs through the entire length of the Municipal District of Stony Plain. With the growth of Edmonton both the amount of traffic and the number of commercial developments along the highway is increasing. Traffic counts taken in 1953 at Winterburn recorded 4,882 cars per day, in 1955 for the same location the traffic count was 5,718. In 1953 there were 6 commercial developments along the first 3 miles of the highway; in 1955, there were 16.

This increase in traffic and development confronts the Municipality with the question of how to accommodate the highway development without unduly reducing the efficiency and safety of the highway. The general experience on the North American continent in this regard, has been, that indiscriminate development along highways has resulted initially in a reduction of safety and efficiency (see graph) and in many cases has eventually forced the highway to be re-located with the resultant loss to both the developer and the taxpayer.

In order to anticipate these probabilities the M.D. of Stony Plain has adopted "the limited access highway regulations" as prepared by the Planning Commission. The regulations are guided by three basic principles:

1. that only services essential to, or dependent upon highway traffic should be permissible highway uses. These include gasoline filling, and automobile service stations, garages, tourist camps, roadside restaurants, and refreshment stands.
2. that commercial zones, consisting of a group of highway commercial developments should be established at an interval of at least 2 miles, unless modified by topography or some special circumstance.
3. that these commercial zones should have limited access to the highway by means of a service road. (see diagram)

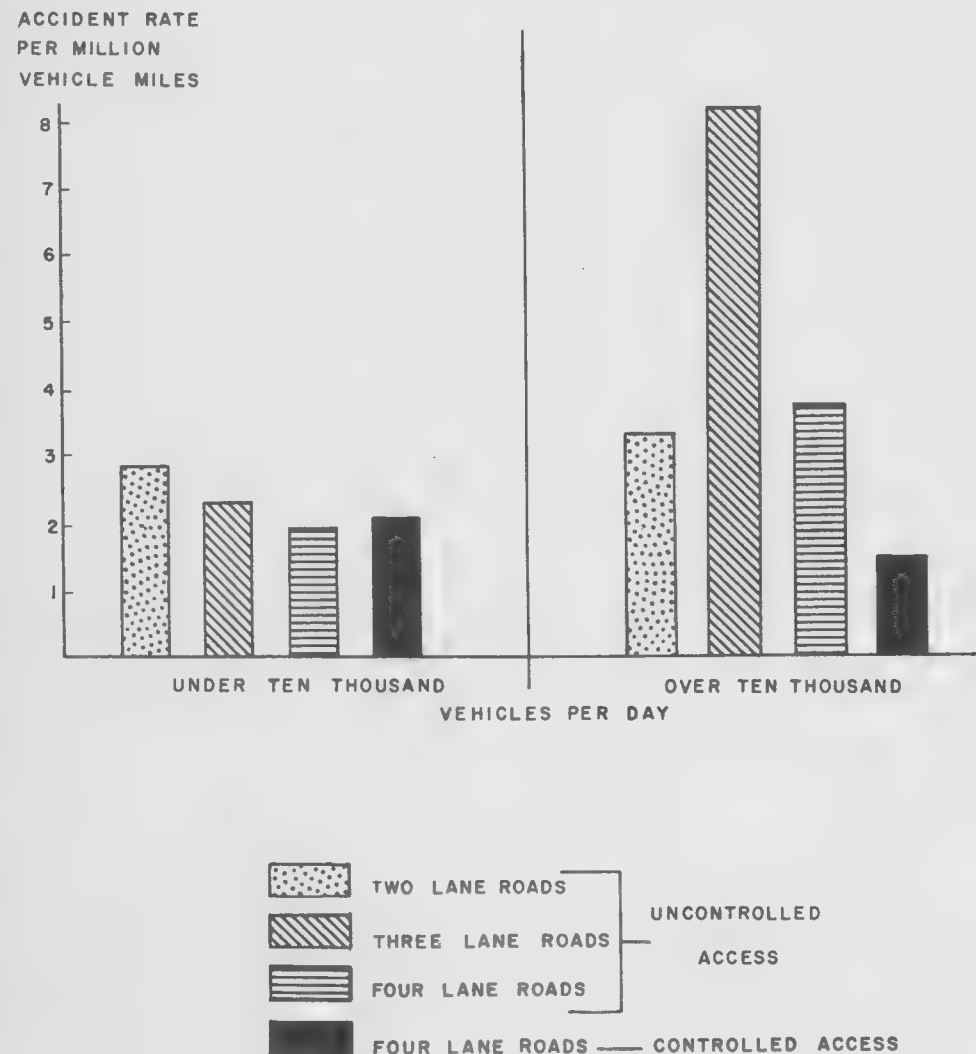
The above mentioned regulations were adopted by resolution of the Council and Interim Development Board of the Municipality and serve as a guide in planning administration. Besides the general provisions the regulations established 10 commercial zones within a stretch of 24 miles of highway.

The stretch of highway between the town limits of Jasper Place and the Hamlet of Winterburn is considered a special area. A zoning map for that area establishes the following zones: Agricultural, Small holdings, Highway Commercial and Public Utilities. The regulations attached to the zoning map define the uses permitted in the 4 zones, as well as the means of acquisition of the right-of-way for the service road and methods of constructing it. Two detailed maps are prepared for each of the two commercial zones, with clearly defined boundaries, length and location of service road and the location of authorized accesses from the service road to the highway.

The limited access highway regulations and the zoning regulations in the special area are being implemented under the provisions of the Town and Rural Planning Act through Interim Development Board zoning powers. As the present trends indicate an increasing volume of traffic for the future, the steps undertaken so far by the Municipality should be improved by continuing detailed zoning along the highway throughout the Municipality.

It may be mentioned that in highway development control there is an overlapping of jurisdictions. Under the Highways Act the Department of Highways must approve all developments within 2,000 feet of the centre line of a highway; whereas under the Planning Act—the Municipality has been given powers of zoning and the Edmonton District Planning Commission has been delegated powers of subdivision control. From the point of view of the developer, this may appear unnecessarily complicated, and it does not always produce the most effective control.

ACCIDENT RATE ON TANGENTS BY VOLUME OF TRAFFIC & ROADWAY TYPE



SOURCE: The Highway Transport Research Branch Statistics U.S.A.

RESORT AND RECREATION DEVELOPMENT

Within the M.D. of Stony Plain there are a number of scenic lake areas. There is the Glory Hills area north of the Town of Stony Plain, the group of lakes south of Carvel, Isle Lake, and Lake Wabamun. All of these areas have a potential for further resort development. In this chapter only the largest of the lakes, Lake Wabamun is studied in detail.

Resort development to be adequate should meet the demands for both private summer cottages and public beaches, parks and picnic areas. The demand for private development seems to be adequately met by owners subdividing and selling land along the lake fronts. The demand for public beaches, since it does not make itself felt as directly seems to be less adequately provided for. Moreover, only certain areas are suitable for this type of public use, since it requires a combination of adequate roads, possibility of public transportation, adequate area, minimum length of beach, low land costs, etc. The number of sites which meet these requirements in any area is limited. The designation of sites for this purpose and the preparation of plans for their development is therefore of considerable importance if the opportunity for their development is not to be lost.

The purpose of this survey is to locate those lakeside areas not yet developed, to give some indication of the extent and character of the site, and to select those areas which have possibilities for development as public beaches.

Wabamun Lake Survey

Size and Location

Wabamun Lake is about 12 miles in length and 2 to 4 miles in width with a shoreline of approximately 40 miles. It is situated 40 miles due west of Edmonton just south of Highway 16.

Topography

The land is generally rolling. In the northwest very steep slopes drop 200 feet to the shoreline, leaving narrow margins of flat land, about 300 to 400 feet in width along the water's edge. In the southwest approaches to the lake are gradual, but there are steep slopes along the water's edge. The eastern half of the lake both north and south has far more gentle approaches to the shoreline and development in depth is possible.

Tree coverage

With minor exceptions the northern shoreline has a fairly dense coverage of trees extending in part north to the highway and beyond. The southern shore is less densely wooded and has fairly extensive clearings, although there is a thin band of dense tree coverage along the shoreline. The southeast corner of the lake is surrounded by low lying flat land devoid of tree coverage. The trees in the whole area are mainly poplar interspersed with birch, pine and spruce, with an occasional fine grove of birch or pine.

Beach materials

The results of a shoreline survey are indicated on the **Wabamun Lake Survey Map**. It can be seen that the greater part of shoreline varies from sand to coarse gravel although in some cases this gravel had an overburden of from 12" to 24" of mud and vegetation. The shoreline in the vicinity of the village of Wabamun is muddy and there is a stretch of mud and swamp on the south shore. There are also short stretches of shoreline which are covered with a mixture of fine coal granules and sand. This material in no way discolours the water and gives a texture much the same as very coarse sand.

Resources

Close to the shore are reserves of coal, gravel, and shale, several of which are being worked. The coal reserves together with the available water has been the main factor in the location of the new Calgary Power 88,000 H.P. power plant just west of the village of Wabamun.

Commercial fisheries take approximately 300,000 lbs. of white fish annually from Lake Wabamun. In addition the Indians from Wabamun Indian Reserve obtain their supplies of fish from the lake. It is also considered attractive to anglers containing both jack fish and perch.

Roads

(see map)

North Shore—Highway 16 provides a good, all-weather approach for the entire north shore of the lake. However, roads have not in all cases been built on the north-south road allowances between highway and lake; and in other cases the roads constructed are not suitable in wet weather.

South Shore Line—Most of the south shore has fairly good approaches by gravel road with some stretches of dirt road. Access to the south shore is not as convenient as access to the north shore, this is in part due to the fact that a grid road system is not the most economical or convenient solution to the problem of access to an irregular shoreline running diagonal to the grid. Locations on the south shore are approximately 12 miles further from Edmonton by road than opposite locations on the north shore.

Transportation

The main line C.N.R. track runs along the north shore of Lake Wabamun, in places being not more than three to four hundred feet from the water's edge.

Although there are stations at the Hamlet of Wabamun, Fallis and the summer village of Seba Beach, no local trains run from Edmonton, and the through trains stop only in special circumstances. The existence of the rail track close to the shoreline of the northwest part of the lake presents problems of development in depth.

In some cases the cliff-like formations would deter development, but in a few instances development north of the rail line is possible. Should such development occur, a pedestrian underpass would be an absolute necessity, in view of the fast through trains and limited visibility.

There are daily bus connections between the Wabamun area and Edmonton, leaving Wabamun at 10:50 a.m. and Seba-Fallis at 3:00 p.m., and leaving Edmonton at 9:00 a.m. and 5:00 p.m.

Development

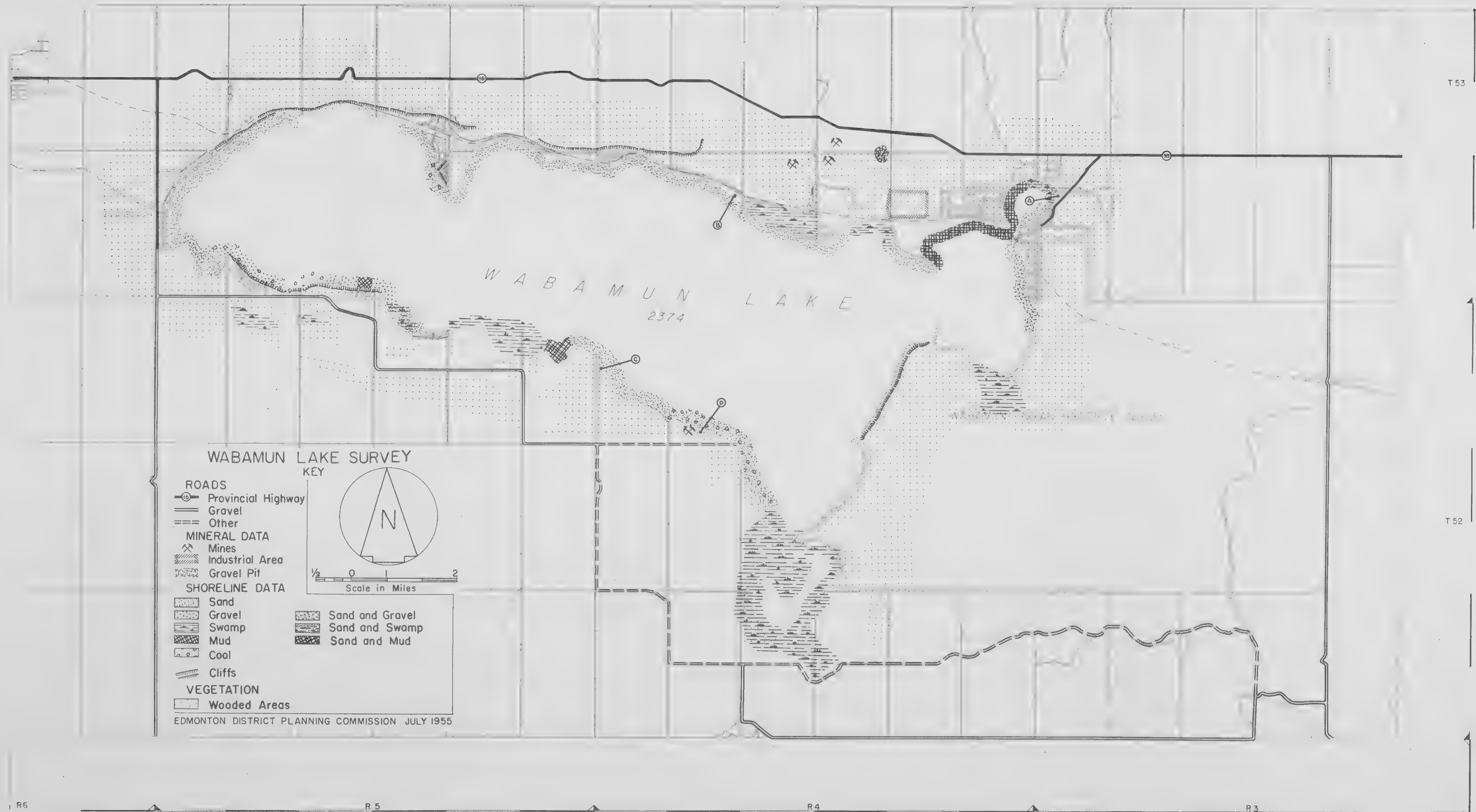
A permanent community exists at the Hamlet of Wabamun based on fur farming, wood chopping, fishing, and more recently industrial development. Population Wabamun in 1941, (201).

Extensive private resort development exists at Seba Beach (Population 1951—(103)), Kapasiwin, White Sands and Fallis. More recently several subdivisions have taken place along the southwest area of the lake.

There are also at various points along the shore a number of camps, Y.M.C.A., Boy Scouts, Girl Guides, etc. But the major development along the lake consists of privately owned beach cottages. Very few public facilities exist for those wishing to spend a day at the lake, or for longer holidays.



Moonlight Bay, site of future Provincial Park looking westward





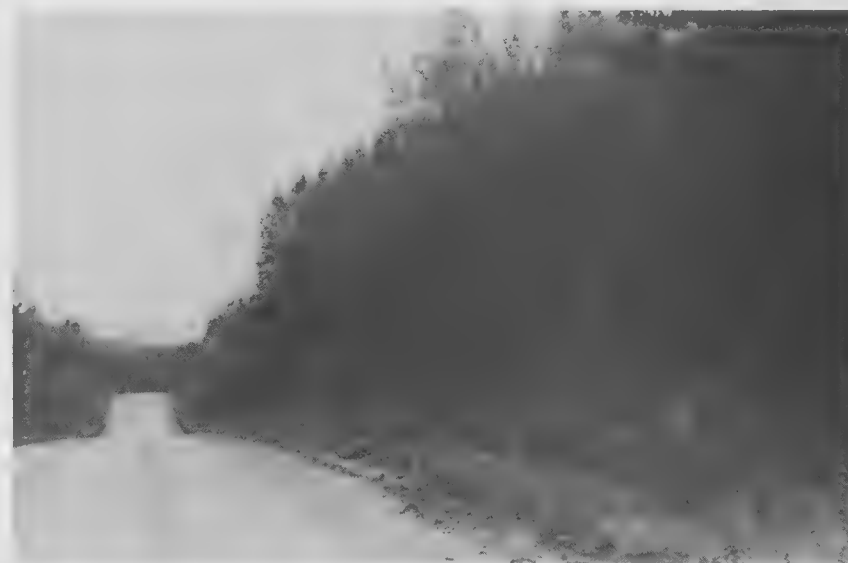
Main C.N.R. line, skirting lake on the north shore



Wooded area and promontory near Fallis



Stretch of sandy beach area west of Point Allison



Looking south towards Moonlight Bay, Lake Wabamun

Wabamun Lake Analysis

Private Development Six to seven miles of shoreline are still available for private development, and provincial subdivision regulations ensure that lot sizes are adequate, that the road layout conforms to contours and that adequate access to the lake is maintained. Present trends would indicate that the remaining shoreline areas suitable for private subdivision will be developed within the next few years.

Public Development It has been stated previously that very few public beach facilities are available on Lake Wabamun. There is an apparent need for expanded recreational facilities of this kind to serve both the Metropolitan Population of Edmonton, and the population of the Municipality. There are, at present, sites suitable for this type of development. These are indicated on the Lake Wabamun map as A, B, C and D.

Area "A"
(Moonlight Bay)

This area includes the northwest, southwest and northeast quarters of Section 7, (53-3-W5) and the northeast quarter of Section 12, (53-4-W5), making in all 640 acres. Approximately 350 acres of this land is municipally owned and has been held by the Municipality as a reserve for park purposes since 1937. From the point of view of access the area has excellent location. It is on the most north-easterly part of the lake and therefore closest to areas of major population, (39 miles) and has an all-weather approach on Highway 16. It surrounds the easterly and northern part of an inlet and the beach area is well protected from winds. It is well wooded, very attractive scenically with suitable slopes. However only the southeast shoreline has sand surface which is suitable for public beach purposes. On the remaining shoreline the sand is covered with one to two feet of muskeg and vegetation, which would have to be removed, if the beach is to be extended. This is an excellent area for a large public park and beach, and the only area available for such a purpose on Lake Wabamun.

Area "B" This site has an area of approximately 22 acres south of the C.N.R. tracks. It is on the north shore between the Village of Wabamun and Fallis and about 45 miles from Edmonton. The land is gently sloping. It is moderately wooded and very little clearing would be necessary for its development. There is a sandy beach the length of the shoreline, and it is an ideal picnic area. The land is privately owned with title under one ownership.

Area "C" This site is east of the Sundance Post Office on the south shore. It is approximately 56 miles from Edmonton. Although the whole northern half of section 30 and a small part of the southwest quarter of 31 (in 52-4-W5) is suitable for development, only the part in Section 31 is crown owned (10 acres).

The remainder is under two ownerships. It is a scenic area with gently rolling land, moderately wooded with some fairly large clearings. There is a sandy beach almost the length of the section. The conditions of roads, is not as good as those on the north shore and it is off the main route for public transport, either bus or rail. It is satisfactory for public beach development—both for local and district use.

Area "D" This site is approximately one mile east of site C. It has an area of approximately 25 acres in the remnant of the S/E quarter of Section 29, (52-4-W5) cut by the lake. It is crown-owned land. This is a scenic and pleasant site, moderately wooded with gentle slope and undulating ground. The beach material is sand interspersed with coal granules. There is on the site, at present, a small shale pit close to the shoreline. With this material conveniently available it should be possible at little expense, to create a fine beach. Very little clearing would be necessary. The problem of access would be the same as for Area C. The possibilities for this area are also the same as for Area C.

Recommendations for the Lake Wabamun Area

Area "A" Through the co-operation of the Municipality and the District Planning Commission, the possibilities of this site were brought to the attention of the Provincial Parks Board. Just prior to the publication of this report, the Board, after investigating the site, has announced that this area will be developed as a Provincial Park.

Area "B" This is an ideal area for swimming and picnicking. It is also the only suitable remaining site for these purposes on the north shore of Lake Wabamun. Development could be undertaken privately or by the Municipality.

- Area "C" and "D"**
1. Acquire the private acreage in Area C.
 2. Reserve these sites for park and beach purposes.
 3. Improve road approaches to Areas C and D—in particular from Highvale to Sundance, and from Sundance to Area D.
 4. Carry out minor clearing and improvement of sites.
 5. Carry out additional improvements as conditions warrant.

Resort Areas other than Lake Wabamun

Mention should be made of the project to develop a site on Chickaboo Lake, with the M.D. of Stony Plain and the Town of Stony Plain sharing costs. The Lake is approximately 8 miles north of the town, and the site of 480 acres has a magnificent setting. With regard to the other areas with a potential for resort development, it is the intention of the Commission in its Regional Plan to carry out, surveys, analysis and to make recommendations similar to what has been done in this report for Lake Wabamun.

GENERAL PLAN RECOMMENDATIONS

The general plan for the rural Municipality of Stony Plain differs from that of a town, in that the land use proposals cannot be summarized in one land use map. The general plan of the Municipal District consists of the agricultural land use guide; the areas selected for new cultivation and measures advocated to encourage cultivation; the delineation of neighbourhoods and communities as a basis for organizing and locating social services; principles of road location; greenbelt and industrial uses on the fringe of the metropolitan area the principles of small holding subdivision, development, and location as determined by the small holding soils map; the limited access highway principles, and highway zoning and development plans; and the proposals for park and recreation development in the Lake Wabamun area.

To implement these various aspects of the General Plan, the following general and specific measures are proposed for action by Council:

OUTLINE GENERAL PLAN, AND INTERIM DEVELOPMENT

1. Adopt, by resolution, the principles and aims of the General Plan for the Municipal District of Stony Plain.
2. Repeal the present interim development by-law passed on August 9, 1952, under the authority of the Town and Rural Planning Act, 1942.
3. At the same time, pass a new Interim Development By-law, under the authority of the new planning act (April 2, 1953), implementing the new form of Interim Development Order, which embodies an Outline General Plan for the Municipal District.
4. Authorize the preparation of an Outline General Plan for this purpose, in the form of
 - (a) a zoning guide map, designating greenbelt, agricultural, industrial, hamlet and highway commercial districts, and
 - (b) a schedule of uses for each land use district, defined in a manner consistent with the regulations of the Outline General Plan of the metropolitan area, and with the limited access regulations of the District Planning Commission,
 - (c) "general plan proposals", which could implement—
 - (i) the principles of small holding subdivision, development and location (see Small holding Soils map) outlined in **Part 4**, and
 - (ii) service road development plans for each highway commercial zone.

SOILS AND LAND USE

1. Adopt the **Agricultural Land Use Guide** as a long-term objective of the Municipality.
2. Establish close liaison between the Interim Development Board and the Agricultural Service Board, with a view to finding the best means of implementing the proposals for each of the five agricultural land use classes.
3. Investigate the reasons for the apparent divergencies between recommended and actual farm practice (See Table 3), with particular attention to the persistence of summer-fallowing and the corresponding deficiency in soil enrichening grass and legume crops.
4. Give encouragement, through the Service Board, to measures that will prevent water erosion, particularly in areas of rougher topography (classes 2 to 5)—e.g. the maintenance and increase of organic matter and fibre content of soils.

5. Submit for analysis to the **Conservation and Utilization Committee** of the province, all lands which have in the past reverted to the municipality for non-payment of taxes, with a view to ascertaining their optimum future use.
6. Critically evaluate applications for non-agricultural development in the municipality—(e.g. industrial, highway, commercial, institutional, etc.)—in relation to the **Soil Rating** map, for the purpose of discovering, before granting approval, whether the requirements of proposed developments can be met on land of lower productivity.

GREY-WOODED AREA—ECONOMIC PROBLEMS

1. Encourage the settling and improvement of unoccupied arable or good pasture lands along already improved roads in the western part of the Municipality (electoral divisions 4 and 5), in accordance with the map of **Selected Areas for New Cultivation**.
2. Discuss with the Department of Agriculture the feasibility of provincial assistance for clearing and breaking on such lands (as above) along the lines of the assistance now provided for the opening up of crown lands.

POPULATION AND COMMUNITIES

1. Gear general capital expenditures to a potential rural population of about ten thousand.
2. Recommend to appropriate authorities that the **Pattern of Neighbourhoods and Communities** (see Map and Table 5) be adopted as the basis for locating schools (either in a full or partially centralized system), regional, branch and local libraries, and local health clinics, should they prove necessary.
3. Delay major road construction until the District Planning Commission's committee on rural roads, on which the Municipality is represented by its Reeve, has completed its work.
4. Adopt as a basis for road improvements, in the meantime, the five traffic requirements identified in **Part 3**.

THE METROPOLITAN IMPACT

1. Embody in the proposed Zoning Guide, those parts of the Outline General Plan for the metropolitan area of Edmonton, which fall within the municipal territory.
2. Continue to delegate to the Edmonton District Planning Commission final approval of all industries producing noxious effects, and which consequently require special control measures.
3. Reserve Lake Wabamun lakeside areas A, B, C and D as indicated in **Lake Wabamun Survey** map and described in **Part 4** for park and recreation purposes by
 - (a) recommending for approval in Area B only those subdivisions relating to summer cottage or resort development.
 - (b) reserving for future purchase by a development scheme (Sections 74 to 80, Town and Rural Planning Act, 1953), or by purchasing immediately the 80 acres of private land in Area C (N. ½ 30-52-4-W5).
4. Facilitate access to the best lakeside recreational sites on the south side of Lake Wabamun, by improving roads from Highvale to Sundance, and from Sundance to Area D. (See Lake Wabamun Survey Map).



INTERIM DEVELOPMENT BOARD, M.D. OF STONY PLAIN

Left to right: E. R. Lewis, E. G. Miller, W. H. Whiteside, A. Shep, L. Miller, Secretary; J. Evjen, Reeve and Chairman.

CARRYING OUT THE GENERAL PLAN

Implementing a general plan in a rural municipality like Stony Plain raises a major administrative question, namely—how can effective co-ordination be achieved between the local agencies which, in one way or another, regulate the use of land? Or, in more specific terms, how can we find the administrative equivalent of the dovetailing aims of the Interim Development Board, charged with the responsibility of preparing a general plan for orderly, economic and convenient development, and of the Agricultural Service Board established "to advise with respect to and assist in proper land utilization with a view to improving the economic welfare of the farmer"?

This central administrative problem is one which can best be solved by means of discussion between the local committees concerned, and so the general plan does not presume to offer any administrative formula. It is hoped, however, that the facts presented in this report, and in some cases made available for the first time, will demonstrate the need for consultation and co-ordination. Only eighteen percent of the land is rated "fairly good to very good arable", and as much as thirty-two percent of the land is rated "pasture". There is, in fact, no unlimited resource of productive farm land—no margin for waste. Per-

haps the penetration of this fact, alone, into town and country consciousness will produce the necessary bridge between the inter-related, but now separate parts, of rural administration.

The Interim Development By-law and Outline General Plan recommended in Part 5 is concerned primarily with what may be called urban uses in the country. These are also the land-uses which can be controlled in the relatively rigid form of a zoning plan. The new form of inter development administration is recommended both to remove any doubt concerning the applicability of the enforcement provisions of the 1953 planning act, and to place the municipality's land-use plan in the more authoritative form of a "zoning guide", advertised, submitted to public hearing, and approved by the Minister of Municipal Affairs. When this is achieved, and it may be readily achieved on the basis of the Interim Development Board's work to date, only a small part of the general plan will be in effect. Further implementation will depend on the initiation by Council of other measures, which, while flexible enough to take into account the human factor in farming and the multiple uses of farm land, will be sufficiently comprehensive and consistent to attain, over time, the conservation objectives of the general plan.

